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Original Articles

BACTERIOLOGY AND SERUM THERAPY OF TETANUS.*

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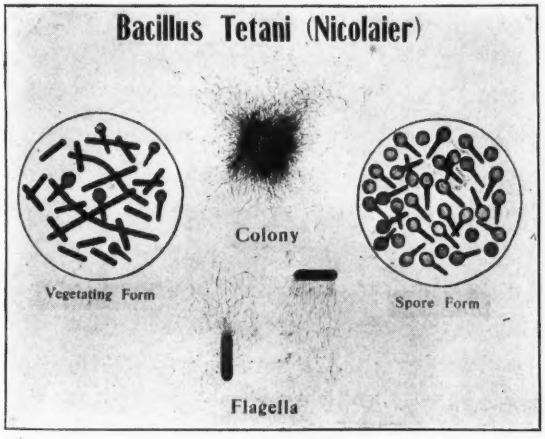
Twenty years ago Carle and Rattone produced tetanus in animals by injecting them with pus from the wound of a patient suffering from the disease. The following year Nicolaier showed that the short club-shaped bacilli found in the soil of gardens, about stables, and similar localities was the exciting cause of tetanus, while three years later Kitasato succeeded in obtaining a pure culture of the germs from garden earth and from the pus obtained from a case of tetanus, isolating them from the associated bacteria always found present.



*Read before the Wayne County Medical Society, Sept. 17, 1903.

The bacillus tetani, as isolated from cases of traumatic tetanus in man or animals; tetanus neonatorium; animals that have developed tetanus from inoculation with garden or stable soil and the intestinal contents of certain animals, etc., is a long narrow bacillus or rod with rounded ends, possessing numerous flagella which render it motile. In some cultures long threads are formed. Characteristic end spores are found particularly when the cultures have been kept at the body temperature. These spore-bearing germs are the so-called drum-sticks which are of so much service in making a microscopical diagnosis. Tetanus germs stain rapidly with ordinary anilin stains and Gram's method. Cultures can be readily grown on most kinds of culture media; particularly if a small amount of glucose be present; provided air or oxygen is excluded; by growing them in vacuum or in some inert gas, as hydrogen, nitrogen, etc. Colonies in gelatin resemble the hay bacillus quite closely. Gradually the gelatin is liquefied, due to a peptonizing substance secreted or excreted by the germs. Cultures upon agar, potato, etc., are so indistinct as to be scarcely visible. Rapid growth occurs in milk without producing any appreciable change. Cultures grow best at 38° C., but growth also occurs at room temperature. H. S. and other gases are generated by the growing bacteria. By artificial culture tetanus germs gradually lose their virulency.

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That the bacillus tetani is the specific cause of the disease has been clearly shown by numerous observers, who have been able to obtain the pure cultures from the wounds of tetanus cases. Such cultures, when injected into susceptible animals, produced typical symptoms of the disease, and they finally recovered the germs in pure culture from the artificially infected animal. Not always can one obtain pure cultures of the tetanus bacillus from cases of the disease, owing to the great difficulty of isolating the germs and the minute number of organisms present in many cases. The disease occurs naturally in horses and man, but other animals may be affected, while crocodiles, etc., are immune. Infection generally occurs as the result of some ragged punctured wound, in which the tissues are more or less bruised or lacerated and soiled with earth, dust, decomposing barnyard refuse or other similar substance. One of the most frequent causes of infection are the lacerated wounds produced by the juvenile toy pistol, target rifle, etc. In these cases the skin is usually well-coated with street dust, much of which is carried into the wound with perhaps the wad or other portion of the charge, and found deeply buried in the wound. Often in these cases too little attention is paid to the wound when received, and on coming to a physician several days later the wound is closed up on the outside, while underneath there is a mass of decomposing tissue, pus, etc., —an ideal laboratory for the production of tetanus poison.

I believe that in every case where a patient reports to the physician for the treatment of a suppurating wound that has been contaminated with earth or in other ways, possibly infected with material containing tetanus germs, a bacteriological examination should be made, whether the patient has shown any of the clinical symptoms of the disease or not. A bacteriological diagnosis may be best accomplished by making microscopic examination of cover-glass smears prepared directly from the discharges of the wound, or sections taken from the broken-down disintegrating tissue that may be scraped from the wound, such preparations being stained by the ordinary anilin dyes and examined microscopically. If suspicious bacilli or the characteristic drum-sticks are found, the case should be regarded as one that would probably develop into tetanus, and treated accordingly. Cultures should be made upon glucose, agar, etc., kept at the incubator temperature and in an atmosphere of hydrogen or under oil, the colonies that develop being examined microscopically two or three days later, and a portion of the material from the wound should be inoculated into guinea-pigs or white mice, which are very susceptible to the disease. Such animals will show symptoms within a few days of tetanus, if the case is a specific one, thus rendering the diagnosis certain. It may be practically impossible to make a bacteriological diagnosis in a given case on account of the disappearance of the germs, particularly if the wound is slight and nearly healed. In such cases sufficient poisons may have been developed previous to the death of the organisms to subsequently produce clinical symptoms in the patient.

For the purpose of immunizing animals for the production of antitetanic serum two methods are generally employed: 1st, that originated by Kitasato and Behring in '91, of injecting gradually increasing doses of a bouillon toxin; 2nd, that of Tizzoni and Cattani, of adminis-

tering cultures subjected to different degrees of temperature. Practically all the antitetanic serum employed outside of Italy is prepared in accordance with the former method, which may be of sufficient interest to describe more in detail.

Virulent cultures of the tetanus bacillus are planted in suitable containers of glucose beef bouillon, the air being replaced with hydrogen or other inert gas, or the surface of the bouillon may be covered with a thick layer of oil, to prevent the entrance of oxygen. These cultures are allowed to grow at the incubator temperature for from seven to fourteen days, or longer, during which time they multiply and produce their soluble poisons, which remain in solution in the beef bouillon after the germs have been removed by filtration through unglazed porcelain. Such a filtered bouillon culture will be hereafter called a toxin. The substances contained in this toxin are many and thus far the attempts of numerous observers to obtain the specific tetanus poison in pure form have been but partially successful. The toxin is then tested for its killing power upon medium-sized unimmunized guinea-pigs. So potent is it to these animals that frequently 1/1000th part of a cubic centimetre is sufficient to produce death in a few days.

Brieger and Fraenkel in the early nineties succeeded in isolating from tetanus toxin a toxalbumin, which they believed to be the specific tetanus-producing poison formed by the germs. So virulent was this substance that 1/300 of a gr. of it was computed as sufficient to kill a full-grown man.

Martin, in studying the question further, succeeded in obtaining two poisonous products: one an albumose, to which he attributed a fever-producing action, and another non-proteid body which excited muscular tentanic spasms.

Later Uschinsky succeeded in growing tetanus cultures in fluids which did not contain proteid matter, but still the organisms produced a peculiar poison.

Kitasato in his early studies found that tetanus toxin lost its poisonous products when subjected to a temperature of 55° C. or over, by coming in contact with various chemicals, as pyrogallol, and by exposure to the direct rays of the sun, but was not destroyed by drying.

The filtered toxin loses its poisonous properties very quickly upon standing, and the ultimate toxin molecule is supposed by bacteriologists to contain at least two affinities; one of which loses its activity very quickly and is responsible for the poisonous action of the molecule. This Ehrlich named a toxaphorous group; the other, a much more stable body, which does not produce a poisonous action upon animals, he called a haptophorous group. This retains its combining power with the immune bodies contained in the antitetanic serum for a long time unchanged. Ehrlich also found that the haptophorous molecule is capable, when injected into suitable animals, of rendering them immune to both affinities.

Quite recently Ehrlich and Madsen have shown that certain tetanus toxins contain two poisons, one of which produces, when injected into animals, tetanic spasms. This they have called tetanospasmin. The other, because it possesses the property of dissolving certain of the red corpuscles, they called tetanolysin. The technique of obtaining these various poisons from the toxin is too complicated and uninteresting to be gone into in detail. Other observers have thought that the action of the tetanus toxin was due to the

presence of a ferment, acting somewhat like a diastase. Certain it is that the tetanus germs, grown upon gelatin, possess the power of liquefying the medjum; likewise, the bacteria-free cultures produce the same reaction, indeed in many respects the physical and chemical properties manifested by the toxin resemble very strongly some of our best-known ferments.

It is sufficient for us to remember that the chemical properties of the poisons produced by tetanus bacilli, when grown in glucose beef bouillon and other suitable culture media, are probably the most potent poisons known, producing when injected into susceptible animals typical clinical symptoms of the disease.

As a result of an investigation made by Bolton and Fisch, to determine the cause of the fatal cases of tetanus occurring in St. Louis, following the injection of antidiphtheritic serum obtained from the blood of a horse which two days later developed tetanus, the following interesting facts were shown:

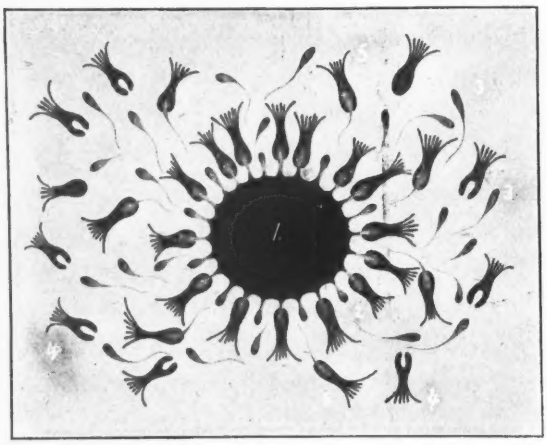
Tetanus toxin may be found in the blood of infected horses four or five days previous to the manifestation of clinical symptoms of the disease, in sufficient quantities to render the serum fatal to human beings when injected in doses of 10 to 100 cubic centimetres; a day or two before the horse shows the clinical symptoms of tetanus the amount of toxin contained in the blood rapidly disappears, so that shortly before the death of the animal it cannot be found, the circulating toxin being replaced by an antitoxin. They found great difficulty in inducing tetanus in the horse by inoculating him with tetanus-bearing earth.

The question often arises, "Why do so few cases of the disease follow earth-infected wounds?" The experiments of Paillard throws some light upon this phase of the subject. He found that tetanus does not result in animals inoculated with tetanus cultures that have been heated to 80° C., such heating destroying everything except the spores, which were rapidly destroyed by the tissue, but if some chemical, as lactic acid, was injected along with the spores, or the tissue injured at the point of inoculation, tetanus did result. Kitasato found on investigating the subject further that a mechanical irritant, as soil, a splinter of wood, or pus-producing bacteria, when introduced along with the spores, produced the disease, and finally drew the conclusion that in the actual infection in man some foreign material or other bacteria must be present in order to produce the disease; that pure cultures of the spores or of tetanus bacilli are rapidly destroyed by the tissues, when introduced, without the development of any clinical symptoms.

In the immunizing processes the tetanus toxin is administered to susceptible animals, usually horses, in minute, gradually increasing doses, by subcutaneous or intravenous injection or both, until the animal is able to withstand thousands of times the quantity of poison that would be fatal to the unimmunized animal. When the animal can withstand these large quantities of toxin, it is certain that the blood and the tissues of the body contain considerable quantities of the antitoxin. The injections of the toxin are then discontinued for ten days to two weeks, then the blood is drawn, the serum collected, and prepared for administration in substantially the same way as the antidiphtheritic serum, the only difference being that there has not been devised a satisfactory method of standardizing the strength of the antitetanic serum.

Many experiments, many speculations, and many interesting theories have been proposed, to account for the production of the antitetanic serum in the blood of animals during the process of immunization. Some have supposed that the formation of antitoxin was developed directly from the toxin injected, by certain cells of the body. This, however, can scarcely be true, since the amount of antitoxin found in the blood of an animal is many times greater than corresponding amounts of toxin injected, and also for a considerable time after the discontinuance of the injections of the toxin the blood may yield a stronger antitoxin than during the time when the poison was administered. Wasserman and Takaki found that the poisonous action of tetanus toxin was neutralized by bringing it in contact with portions of the central nervous system of guinea-pigs in the form of an emulsion, and that such emulsions of nerve tissues were capable of preventing tetanus in mice against several times the fatal dose of toxin. Donitz, Heymans and other investigators have shown that the cells of the animal body have the ability to combine and neutralize the harmful effects of tetanus and other toxins without producing symptoms of disease, in fact such observation is of daily occurrence in the reactions of patients to the intoxications occurring in infectious diseases generally. These and other facts have caused most bacteriologists to conclude that certain cells of the body are stimulated by the toxin to the production of immune substances, or anti bodies, and since it has frequently been demonstrated that the blood of untreated horses and other animals contains small quantities of antitoxin, it seems probable that the elaboration of antitoxin by these cells is one of their normal functions. Many experiments have been made to determine the exact chemical nature of the immunizing substances contained in the anti serums, and it is now generally believed that they are globulins or modified globulins that are thrown off from certain unknown cells when stimulated by the introduction of the poisons. While many theories have been offered explaining the curative effect of antitoxin it is not the purpose of this paper to discuss them, but to briefly mention that of Ehrlich, which has been received as the most plausible explanation. Ehrlich, as the result of his own experiments and those of his many co-workers, concluded that the cells of the body consist essentially of molecules of protoplasm containing a central atom group with a large number of side chains, i. e., atom groups or affinities which combine with the molecules of certain food stuffs, thereby supplying the living molecule with nutrition, hence the name receptors has been given to them. A number of different receptors have been supposed to exist, some of which have the property of fixing molecules of simple constitution. These have been called receptors of the first order. The chart, which has been reduced to the simplest possible terms, explains most satisfactorily the formation of the antitoxin molecules and their union with corresponding affinities of the toxin molecule. The large central portion stained brown may be regarded as a cell, from the periphery of which pseudopodia colored red have been pushed out; these are the side chains or receptors. The irregular shaped body stained blue may be regarded as the toxin molecules that have been elaborated by the germs in the patient or injected into the animal during

the process of immunization. These toxin molecules unite with the receptors, thereby rendering them incapable of performing their normal function. The cell, being deprived of part of its affinities for acquiring nourishment, reproduces more receptors, and, as is usually the case with nature, the repair is more than made



1 Cell body.
2 Attached receptors.
3 Detached receptors.
4 Toxin molecules.
5 Detached receptor and toxin molecule united.
6 Attached receptor and toxin molecule united.

good. More receptors being formed than are normally present, the cell not needing these for its nutrition, they become detached and float in the blood current as free molecules of antitoxin. These free antitoxin molecules possess the same power of uniting with the toxin molecules as when they were attached to the parent cell. This overproduction of receptors is increased from time to time by the stimulation of the toxins administered, or during the course of an attack of disease, until finally the animal becomes thoroughly immunized and contains in its blood enormous numbers of the free antitoxin molecules, which prevent any pronounced action following the administration of toxin. In the case of tetanus in the patient, it seems probable that the anti bodies are formed too slowly to neutralize the toxins as rapidly as produced, when those left over combine with the attached receptors of the cells and thereby interfere with their normal function or possibly in the case of nerve cells increasing their excitability, etc.

To recapitulate, we have the cell protoplasm possessing the property of forming special groups of affinities for the purpose of acquiring nutrition from the surrounding fluids. These unite with the toxin formed by the tetanus germs, the cell is thereby stimulated and an over-production of these affinities or receptors occurs, which become detached and float in the serum as antitoxin molecules, which in turn fix the toxin molecules that are introduced by artificial injections of toxin or are elaborated by the tetanus germs in the wound of the patient.

This union of the antitoxin molecule and the toxin molecule resembles very strongly the reaction occurring when acids and alkalies are brought together, in fact, owing to the marked affinity of these two substances for each other, if precautions are taken, an antitoxin can be actually titrated against a toxin. Instead of using some color reaction as an indicator to show when the union is complete, as in the case of an acid and an alkali, it is necessary to inject the mixture into susceptible animals, but, by varying the quantity of the toxin to the proportion of antitoxin administered, exact neutralization may be affected.

The therapeutic use of antitetanic serum can best be considered under three heads, viz: local application to the wound, administration for prophylactic purposes, and administratoin for curative purposes.

Calmette and McFarland have shown

by a number of interesting experiments upon animals, particularly the guinea-pig, that it is possible to inoculate these animals with tetanus cultures, then apply dry antitetanic serum to the wound, and thereby prevent the development of the disease, while the control animals almost invariably succumb at the proper time from genuine tetanus. From these experiments it would seem to be entirely rational and to be recommended that in suspicious wounds, besides employing the usual surgical means of eliminating infection by free incision, drainage and antiseptic treatment, that dry serum be applied as a dressing, taking pains to allow the material to come in intimate contact with the surfaces of the wound, in much the same way as one would in the use of iodoform or other dressing powders. One of the most important facts to remember in connection with the local treatment of a wound that may result in tetanus is that the bacillus will not grow in the presence of air or oxygen. Hence it is strongly advisable to open a wound freely and cleanse it thoroughly with peroxide of hydrogen or other suitable disinfectant, indeed it seems almost inexcusable for a physician, knowing this fact, to neglect to open a suspicious wound and treat it as suggested, when the case first comes into his hands. A number of instances have been reported where this has not been done, in spite of vigorous serum treatment the patient dying of tetanus a few days later, when proper local treatment would almost certainly have prevented the development of the disease.

ADMINISTRATION FOR PROPHYLACTIC PURPOSES.

No more certain demonstration of the neutralizing effect of a therapeutic agent over a poison has ever been made than by the administration of a small quantity of antitetanic serum, mixed with many times the fatal dose of tetanus toxin to a susceptible animal, not a symptom of the disease appearing in such cases. As you will notice in the cage of guinea-pigs you have before you, some of the animals manifest symptoms of tetanus from the administration of minute doses of tetanus toxin four days ago. At the same time these were injected, several others of the animals received many times the fatal dose of tetanus poison, mixed with a small quantity of antitetanic serum. In no instance have these animals been sick, indeed two of the animals have received daily injections of many times the fatal dose of tetanus toxin since the mixed toxin and antitoxin was administered, and still they show no symptoms of the disease. It has been estimated by one authority that the amount of antitetanic serum that will cure a case of tetanus is ten thousand times the amount necessary to prevent the development of the disease, if the serum were given at the time of the infection. Hence the strong recommendations that have been made by those who have studied most the value of antitetanic serum, that in all cases of suspicious wounds a small injection of the serum should be administered as a prophylaxis. Probably ten cubic centimetres would be the average amount necessary for this purpose.

ADMINISTRATION FOR CURATIVE PURPOSES.

Antitetanic serum has been administered for curative purposes in a variety of ways. In most cases the subcutaneous administration of the serum has been given preference, but clinical as well as laboratory experience has shown that it is

necessary to employ an enormous quantity of the serum for curative purposes as compared with the amount required of the antidiphtheritic serum. In the early history of tetanus many of the cases of failure to obtain recovery were due to the fact that the physician was too conservative to administer sufficient serum. At present it may be considered as settled that, where antitetanic serum is administered for curative purposes, the quantity of serum to be injected must be extremely large. An average amount in my opinion should be not less than ten cubic centimeters every six hours, repeated night and day, until symptoms of improvement are noticed. Others will hold that it is better to administer larger quantities at a time and not repeat so often. Perhaps, as in the case of anti-pest serum, it would be still better to administer a hundred or more cubic centimeters into the vein as a first injection, to be followed in subsequent injections according to the condition of the patient. In any case the physician should not hesitate to give large doses of the remedy. Several cases have been reported where hundreds of cubic centimeters of the serum have been administered, resulting in the cure of the patient. In my own experience, I have seen recover from severe tetanus a little girl, 11 years of age, who received ten cubic centimeters of antitetanic serum every six hours for eight days in succession, the injections then being gradually diminished until they were discontinued at the end of the fourteenth day. In this case there was something like four hundred and fifty cubic centimeters of serum administered altogether. Some years ago a French investigator, studying the question of the administration of tetanus antitoxin upon guinea-pigs inoculated with tetanus, found that he could save a large portion of his animals by trephining the skull, and injecting the serum directly into the nerve tissues, his belief being that in this way the antitoxin would come more quickly in contact, and would therefore unite more quickly with the tetanus toxin under these conditions. Extensive clinical experiments upon patients, have not shown that this method of injecting the serum is preferable to the subcutaneous injection of large doses. Still later there has been reported the introduction of the antitetanic serum in the ventricles of the brain and into the spinal cord. This method of administration may be a good one, but should be regarded as purely experimental. I have treated quite a large number of animals suffering from laboratory tetanus by venesection, replacing the extracted blood with normal saline solution, warmed to the temperature of the body, in addition to the use of serum, with the result that many of the animals, which otherwise would have surely died, were saved. This treatment, however, should also be regarded as experimental.

In conclusion, while antitetanic serum has not resulted in as brilliant results from a therapeutic standpoint as in the case of the antidiphtheritic serum, it should be regarded as the most valuable therapeutic agent we have at our command for the prevention and treatment of this dread disease, but whenever used for curative purposes large and repeated doses must be given, remembering that if it does no good it will do no harm. Its great field of usefulness, however, is as a prophylactic measure before the development of the symptoms of the disease, which have been so truly called by an eminent physician "the symptoms of death."

THE McGRAW ELASTIC LIGATURE FOR GASTRO-INTESTINAL ANASTOMOSIS.*

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Detroit.

With the advancement of surgery, operations upon the upper part of the abdominal cavity are gaining in frequency. The increasing success attendant upon operations on the stomach is determining more attention to that organ from a surgical standpoint. The commonest conditions requiring surgical intervention are those in which an opening is demanded between stomach and intestine, because of partial or complete, benign or malignant pyloric obstruction. Hence we see the increasing importance of a good method for gastro-enterostomy. Of the many methods devised we will in this paper speak only of that method invented and first introduced by McGraw.

While this method is simple in technic yet it is thoroughly efficient and requires no special apparatus other than the ligature itself—accomplishing the desired result in reasonable and sufficient time, at the same time fulfilling all the requirements of such an operation under almost all conditions. The wider education of operators and surgeons in the technic of this operation will result, I firmly believe, in its widened and widening use.

The first step in the operation is making the abdominal opening. Originally this was done by McGraw by making an incision beginning an inch and a half above the umbilicus in the median line carrying it transversely to the left about four inches. This gives most easy access to the stomach, but as it severs the left rectus muscle it thereby increases the chances for hernia and has been abandoned for the median incision in practically all cases. The opening should be ample in length to permit of free access to the stomach and to allow free handling of both stomach and intestine.

The second step is the finding of the stomach and the selection of the point in it for the anastomosis. This is the same as in any operation for gastro-enterostomy. Formerly operators chose the anterior wall. But as this in some cases produced obstruction by sagging of the intestine the posterior wall was later chosen, reaching it through a slit in the mesocolon. At present some choose the anterior wall, while others following the suggestion of Mayo to prevent vicious circle, choose the posterior wall near the greater curvature, reaching it through the gastro-colic omentum. The preference seems to lie with the posterior wall.

The third step is the finding of the small intestine and the selection of the point in it for union with the stomach. The point to select is the jejunum about four hand breadths from the duodenum. This point is not always easily located. The following method will avoid difficulty: Draw out the transverse colon, putting its mesocolon on the stretch, then by passing the finger from right to left, intestine will be found passing under the ligament of Treitz, which is the jejunum at its beginning. The point to select should be about four hand breadths lower. That the peristaltic action of both stomach and intestine should be in the same direction was formerly advocated by McGraw and for that reason he always made a turn in the intestine. He has since abandoned the idea and likewise the practice.

*Read before the Section on Surgery at the annual meeting of the Michigan State Medical Society at Detroit, June 12, 1903, and approved for publication by Committee on Publication of the Council.

Having selected the two points for approximation the fourth step can then be taken, which is to place the first part of the running suture. This is best done by having the assistant hold the two viscera with serous surfaces approximated in lines parallel to the point where it is desired to have the openings made, when a running Lembert suture of silk, catgut or celluloid silk is placed to firmly unite them for a distance of from two to four inches depending upon the length of the opening desired.

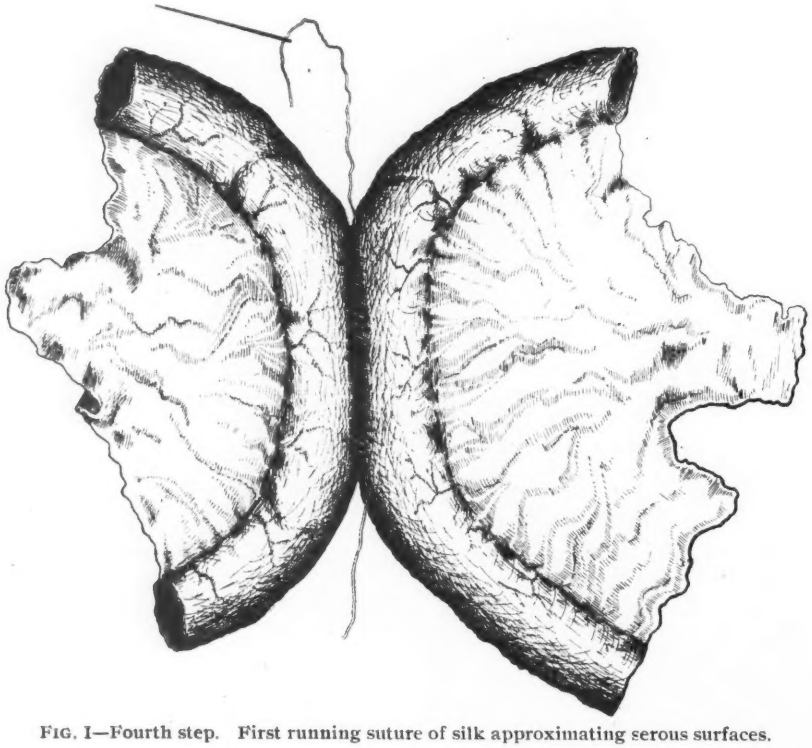

FIG. I—Fourth step. First running suture of silk approximating serous surfaces.

I speak of the three kinds of suture material, catgut, silk and celluloid silk, as all three kinds have been used. Catgut has been abandoned as a permanent suture is needed. Of the other two either can be used though the choice usually is silk. This suture should be secured at the beginning and also at one or more points besides to prevent purse string contraction. In the intestine this first suture should be near the mesentery to allow of room for the elastic ligature.

The next or fifth step can now be taken and is the all essential and characteristic feature of the method, all other points being simply aids and accessories. This is the passing of the elastic ligature. A cambric needle, armed with about six inches of elastic ligature, round, smooth and larger in diameter than the needle itself, is passed into the lumen of the gut, in the long axis, at a point opposite the beginning of the running suture and made to emerge just opposite the end of the same including in its grasp from two to three and a half or four inches of surface. By making strong traction on the ligature it can be made so small that it easily passes through the tissues, again resuming its full caliber when tension is removed and completely filling the hole it made in passing thus preventing the escape of feculent matter in the further manipulations. The

same thing is done in passing the ligature through the stomach wall. The two ends of the ligature are now brought together

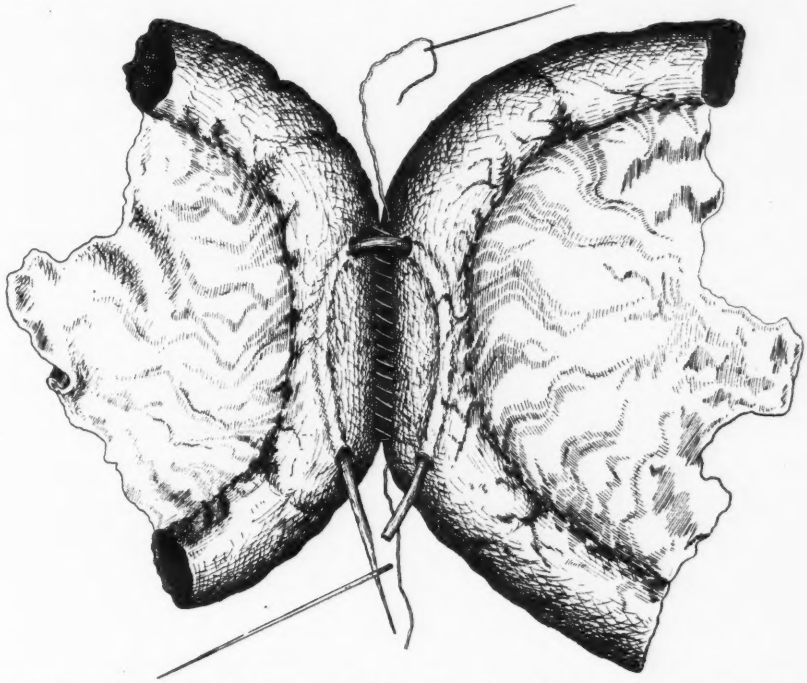

FIG. II—Part of fifth step, showing elastic ligature introduced into both viscera and ready to tie.

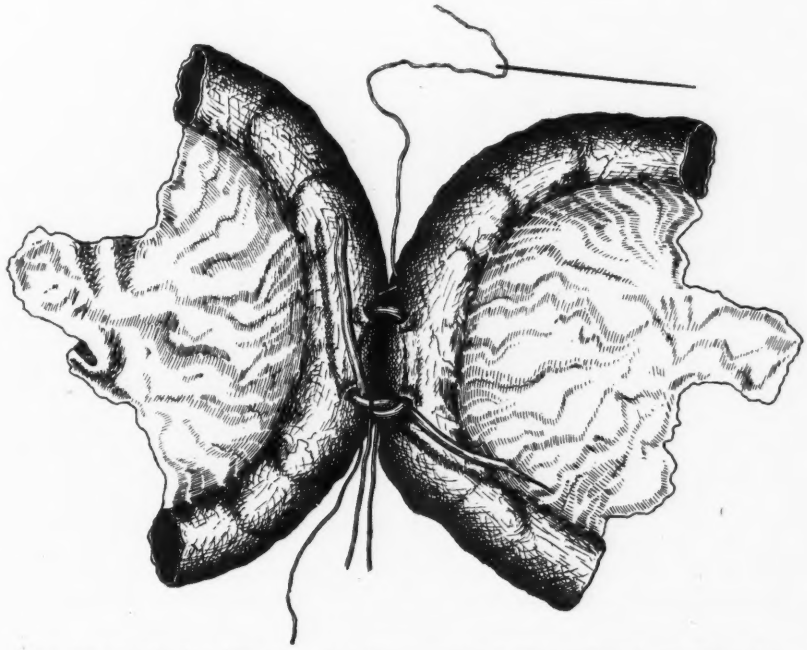

FIG. III—Continuing fifth step. Ligature partly tied, surrounding tie of silk in place.

and tied in a square knot with the additional security of a strong silk thread tied around the elastic knot to prevent it from slipping. In most cases the first tie of the square knot alone is found sufficient.

Several points for consideration arise in this connection. The choice of a ligature is a matter of the greatest importance, for upon it and its work depends the whole

success of the operation. The ligature found to be most satisfactory is the one ordinarily used for the ligation of piles. It has the necessary qualities of smoothness, elasticity and great tenacity and is kept in stock by most instrument dealers. It can be thoroughly sterilized by boiling and not be injured thereby, but it will deteriorate with age. By cutting to the desired length and making a taper end it can be easily passed through the eye of the needle to be used. Before a ligature is used its tensile strength should be fully tested. A ligature should be strong enough to resist all the strength of ones hands. In tying the knot after passing the ligature it should be pulled just as tight as possible. Should the ligature break another can be used easily; it is much better for one to break in the operation than to have it so laxly tied that it will not cut through.

The common cambric needle is the one of choice for the ligature though other kinds can and have been used.

In the tying of the knot the wall of the intestine as well as the wall of the stomach is thrown into deep folds; but in the course of a few hours these begin to smooth out and soon disappear so that when the opening is completed at the end of three days or more the wall is flat as normal.

The opening in the intestine should be opposite the mesentery.

With the ligature tied and secured the sixth step should be taken, which is continuing the running suture of silk around the elastic knot to surround and bury it to cut its way through.

The seventh and last step now remains, viz: to close the abdomen, the selection of a method resting with the operator.

The shock following this operation is no greater than that in most operations of like gravity, yet several cases are reported where patients have died within 60 hours following the operation without any assignable cause being found at the autopsy.

I will not here speak of vicious circle further than to say that during all the work the possibility should be ever in mind of its formation and everything done to prevent it. To avoid this grave condition some have advocated the making of a second opening between intestine and intestine. This gives free drainage to the duodenum which is the portion entering into the formation of vicious circle with the first portion of the jejunum.

To summarize, the steps of the operation are:

(1) Opening the abdomen.

(2) Selection of point in the stomach for anastomosis.

(3) Selection of point in the intestine for anastomosis.

(4) The first running suture of silk.

(5) Passing and tying the elastic ligature.

(6) Completing the running suture of silk.

(7) Closing the abdomen.

I wish to emphasize:

(1) The need of the ligature being strong.

(2) The necessity of a tight knot.

(3) The necessity of a large opening.

When one has gained a familiarity with this method it proves to be one most simply and quickly done. In the hands of the operators who have given it a thorough test it has proven to be thoroughly efficient.

HEADACHE.*

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Demonstrator of Nervous Diseases and Electro-Therapeutics, University of Michigan.

Headache, although a symptom rather than a primary disorder, is frequently so prominent and disturbing a symptom that from the patient's standpoint it constitutes the disease itself. The history of every case will vary in many particulars, but all will be the same regarding the continuous, more or less severe, headache; as until this becomes constant relief is not generally sought. Even the characteristic periodicity of migrain has disappeared or been obscured by a constant ache. But the history of the onset, the character and location of the ache, the exciting causes, and the general state of the patient will be necessary for a correct diagnosis and treatment.

The pathology of headache is that of the general system rather than of the nerves giving rise to the headache, except in organic brain disorders, which give rise to a class of headaches not to be considered here except as to their differential diagnosis.

The most frequent general condition, and indeed one that is present in all, is a lithæmic—or uric-acid diathesis. Both these terms are open to discussion as to their exact meaning, but in accordance with the latest investigations we understand by them a condition in which there is an autotoxæmia due to the suboxidation of the waste products of the body. The toxic products are the ammonium compounds of the Xanthin bodies. These products circulating in the blood in these particular instances cause such irritation of the nerves supplying the cerebral meninges, and in migrain of the fifth nerve generally, and frequently of the upper cervical that the syndrome of headache is the expression of the constitutional state. Underlying this uric-acid diathesis there is deficient action of the nervous system primarily. This is evidenced by the hereditary history of these cases: Rheumatism, neuralgia, migrain, or some nervous disorder in a number of generations.

Given this general constitutional state, there must be some reason for its chief expression as headache.

These reasons are found in the exciting causes which vary in nearly as wide a range as the individuals themselves.

Eye-strain, nasal, throat or ear troubles, carious teeth, disorders at a distance, as menstrual disturbances, all must be sought for and eliminated before treatment can be successful. Overwork, mental or physical; or emotional strain—any one may play a rôle in the etiology of headache, and again must be considered in the treatment of the same.

The symptoms may be the characteristic ones of migrain, the constant headache varied by severer attacks when the pain is at first localized in one-half of the head, generally the left, at the temple, passing over to the back of the neck and finally invading the other side of the head. These symptoms are combined frequently with nausea, sometimes with vomiting; and with various paræsthesias of the general or special senses.

This severe attack lasts as a rule twenty-four to forty-eight hours, terminating in sleep. Or another description is that of pain beginning in the back of the neck and

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gradually involving the whole head. After such headache the scalp is sore for a day or two. Again, the pain may be confined to the back of the neck and there may be a "drawing" feeling here, with pain or aching along the length of the spine.

In other cases there is a rush of blood to the head, a blurring of vision, extreme aching at the base of the brain, with mental confusion.

Headaches of any sort long continued incapacitate the patient for work, mental or physical, make him irritable and moody in disposition, and his life a burden. Frequently these patients fear insanity as a result of the headaches.

The characteristic points in headache are the pain, its location, mode and time of onset, and duration.

Headaches due to organic brain disorders, tumor, syphilis, to Bright's disease, diabetes or uræmia can be recognized either by special cerebral symptoms and the history in the one case, or by careful urinary analyses in the others.

With the headache of tumor optic neuritis, and at some period of the case disturbances due to the involvement of cortical areas, are found. The syphilitic headache comes on or increases in severity toward night.

In reality the diagnosis of headache, as its pathology, is that of the constitutional condition.

It must also be borne in mind that headache is a common symptom in the infectious diseases, and they must be eliminated before a diagnosis is made.

In ocular headaches the pain as a rule comes on after use of the eyes or any strain, as bright light. Rest of the eyes relieves, and the wearing of glasses in time cures. The pain is not always localized.

Anæmic headaches may also come on after use of the eyes, and frequently there may be a combined condition of anæmia and ocular strain. The anæmic headache is brought on by any exertion; it is a generalized ache as a rule, but may be unilateral or supra-orbital. In migrain or hemicrania we find the pain localized in the beginning to one side of the head, accompanied by nausea, vomiting, flashes before the eyes, tingling or numbness in the lips, side of the face or along the arm of the affected side, which is generally the left.

The important point both as regards prognosis and treatment in the individual case depends upon the recognition of the cause and the possibility of its removal.

The treatment is of two orders: That of the constitutional state, and that of the exciting or auxiliary causes.

Taking the latter first the case must be thoroughly examined in every particular to determine exactly what factors are at work. These being established, they must be removed as far as possible. Eye-strain must be met by proper glasses or operation; the ears, teeth, nose and throat all must be put in as normal condition as possible in order that all irritations may be removed. If menstrual difficulties are present they must be treated.

Next, as to the constitutional treatment. The indications are first, for the removal and counter-action of the toxic products; second, for the establishment of the normal oxidations of the waste tissues of the body.

The first is brought about by free elimination from the intestinal tract, and by means of the kidneys and skin. To counteract the toxic products intestinal anti-

septics must be employed, as it is from this part that these bodies gain entrance to the blood stream.

To bring about normal oxidation means that every organ must be restored to its full function. These all depend upon the nervous system, so that the primary point of attack is there. And first of all to meet this indication the hygiene of the patient must be corrected as regards work, rest, habits, diet and exercise. Neither foods nor drinks that tend to increase the work of the organism should be allowed; the patient should have long hours of sleep, and exercise in accordance with his powers.

Nerve tonics, especially those containing phosphates, are useful. Hydrotherapy in the form of warm baths, cold sponges and salt baths keep the skin in good condition and reflexly stimulate the nervous system.

Static electricity is a powerful adjuvant in the treatment of the constitutional state. It is given as a breeze followed by a half minute to one minute application of sparks along the length of the spine, the sparks varying from a friction spark to one of an inch in length. By this treatment every cell in the body is stimulated to better and more vigorous action; in consequence of which elimination is increased from every excretory organ, and the patient's circulation, digestion and general feeling are improved.

Early in the case it will be necessary to meet the severer attacks. The remedies used for this by their multiplicity show how unsatisfactory they all are. The principle guiding their selection is sedation without undue depression.

In addition to remedies, a mustard paste at the back of the neck, a hot pediluvium, rest in a quiet, darkened room materially relieve the discomfort.

The following cases illustrate the varying exciting causes and the nearly general constitutional state of suboxidation, with results of treatment.

CASE I.—May 26, '96. Patient female, aged 45 years. Mother living, aged 68, good health now, but used to be troubled with neuralgia and sick headache.

Family history otherwise negative.

As a child patient was healthy. Had the usual diseases of childhood with no sequelæ.

Menstruation established at 13 years, normal.

Married at 23 years. Has borne 5 children. One miscarriage due to lack of strength 11 years ago.

About ten years ago began to feel trouble with her head. There was a rush of blood to the head and constant pain in back of head, and pain along the length of the spine. There was blurring of the eyes with rush of blood to the head, so that the patient ran into objects; a buzzing noise in the left ear.

At present the condition is an increase of the former for the past two years. Now at times has to go to bed with headache, it is so severe. This is at the time of the menstrual periods. Last month had to go to bed one week before time of menstrual period with severe headache and was delirious, "hystericky," and at times unconscious or comatose.

Menstrual flow was absent. Nose bled slightly. Was troubled with fluttering of the heart.

Has great pain across small of back and kidneys. Has a chilly feeling in limbs, while spine is burning hot. Frequently has chills in the morning. Complains of

pain in ovarian regions, in limbs, and of general weakness.

Examination:—Heart and lungs negative. Constipation. Tongue coated.

Genito-urinary examination:—Cystocele, lacerated cervix eroded, cervical endometritis. Uterus measured 3 inches, tender, congested. Albuminous discharge.

The sciatic, anterior crural, ilio-inguinal nerves all tender on pressure, also those of the upper extremities. Tenderness of spinal nerves all along spine at their emergence; sacro-iliac joints tender to pressure, and also sterno-costal cartilaginous joints; both left and right.

Urinary analysis showed high specific gravity and uric acid in excess.

An analysis of this case shows two factors: First, the congested condition of the uterus, which, with its accompanying menstrual disturbance, produced periodically circulatory disturbance of the head severe enough to bring about coma and delirium with the pain; second, an inflammation of the nerves generally throughout the body, which accounted for the constant headache and spinal irritability. The treatment was based upon this analysis.

The endometritis was treated by the use of the direct current, and uterine tonic medication; with the addition of hot teas and hot foot baths at the time of the period to insure a sufficient flow. The neuritis was treated by anti-rheumatic remedies with free elimination, and the static current daily, the breeze followed by the spark along the spine and over the inflamed nerve areas.

As a result of treatment the patient experienced relief at once. So that at the June menstrual period—two weeks after beginning treatment, the flow was of normal duration, and she showed only slight symptoms of headache, controlled fully by one dose of 10 grains of potassium bromide. Reported during this time that she felt better than in two years. After two months of treatment patient was dismissed, as she considered herself well enough to leave. From time to time she reported continued freedom from headache.

Case II.—Dec. 12, '92. Female, aged 41.

Family history negative.

As a child patient never remembers being sick except with sick headaches.

Menstruation established at 14—normal.

Married at 21.

One miscarriage at 22 due to carelessness; good recovery.

Has borne five children.

Three years ago suffered a second miscarriage; cause unknown.

Has been subject all her life to headaches about once a month, generally occurring a few days before the menstrual period, the onset of flow relieving headache.

While pregnant never had headache.

These headaches are accompanied by nausea and at times by vomiting. Pain is across the forehead. At these times very nervous; everything disturbs her.

About four years ago had a "nervous attack." This came at night with headache in back of neck, next morning things swam before her eyes, was dizzy, head ached worse, could not stand. Pain continued in back of neck for four to five months. Was confined to bed with it. Pain made neck stiff and drew the head back. Could not bear the light, it made her sick. Could not look at people or objects. Scalp was sore. Could not bear any weight on the head.

Gradually gained use of eyes. Thinks during this time left eye turned out.

Present condition:—Since four years ago has had more or less constant pain in back of neck. Drawing and stiffness of back of neck, scalp sore and tender. Head aches constantly, though worse by spells. Feels irritable, head is confused, fears she will lose her mind if headache continues. Headache makes her sick at her stomach. The more severe attacks depend on excitement and occur a few days preceding the menstrual periods. They last about 24 hours beginning in the morning. Pain is a *beating one,* weakens patient. Patient is pale during headache and incapacitated. Appetite is good. Bowels regular. Tongue very slightly coated. Pulse 102. Palpitation on exertion. Examination of heart negative except as to irritability and rapidity of beat.

Temperature 99-7°.

Genito-urinary examination, negative.

Urinary analysis, negative.

Excessive tenderness of the occipitalis major nerve on left and upper cervical nerves on left and of chest joints especially at the junction of the 4th and 5th ribs with their cartilages. The nerves of the extremities are generally tender.

Here again the inflamed condition of the nerves is the explanation of the constant headache. This explains the drawing and sore feelings, the confusion of mind and irritability.

The treatment was directed toward eliminating the cause of the neuritis, which appeared to be a rheumatic one.

The patient was put upon daily doses of sodium phosphate and salol and phenacetin, with daily treatments of static electricity. This again as the breeze for eight minutes, followed by discharging sparks along the spine especially over the neck, at the back of the head and over tender points on chest and over extremities; in fact, wherever tenderness had been found in examination.

As soon as the temperature became normal the phenacetin was discontinued and the salol given alone before meals with a nerve tonic after meals.

Treatment began December 12th, and was given daily till January 21st, after that every other day for 3 weeks; and finally only just preceding menstruation.

From the beginning of treatment to the present time patient has had but three headaches, and those three were during the first month and after sufficient cause. One occurred after a day's shopping in the city combined with Christmas doings. One after an experience in a railroad wreck, and the other after a long day's visiting. These headaches were all controlled by not more than two migrain tablets, and mustard paste at neck, patient not finding it necessary to keep quiet more than an hour or two.

This result is in contrast to twenty-four hours duration, sending patient to bed, of the severe headache, and continuous slight headaches. Patient's mind lost its confusion, her family noticed the change in her disposition. She became cheerful and energetic again.

CASE III.—Jan. 4, '03. Patient female, aged 34. Father living aged 80, good health, subject to sick headache.

One sister died at 38 years of consumption, following la grippe.

Patient was born prematurely at 7 months. Had whooping cough at 6 weeks. Did not grow much for one year. Was so small she used to be drawn about in a doll's carriage.

At 7 years had rheumatic fever. Good recovery. No return. Of children's dis-

eases had measles and scarlet fever between 15 and 16 years of age, no sequelæ.

Menstruation established at 14 years. Began at this time to be troubled with terrible headaches. Had to stay out of school one year. Pain was then in the back of the neck nearly all the time. It did not depend on time of menstrual periods.

Eye examination at this time showed her to be hyperopic-astigmatic and putting on glasses relieved her headaches.

Dysmenorrhœa from the beginning, relieved three years ago by operation—cervix dilated and uterus curetted.

At 19 years had a long siege—ten months—of nervous prostration.

Patient had taught school ten years.

For last ten weeks has had constant headache and pain in back of the neck, which once a week has increased in severity so that for 24 hours it has been unbearable.

The pain begins in one temple, going over to the other side later. Breathing is disturbed by the pain. Sleeps well as a rule.

Appetite is fair. Is troubled some with nausea. Bowels are constipated, tongue shows a brownish coat. Pulse 66; *weak*. Temperature 99-6°.

Examination shows marked tenderness on pressure over occipital majors and upper cervical nerves, especially on the left, tenderness on pressure over circumflex, musculo-spiral, median, ilio-hypogastric, ilio-inguinal, sciatic and anterior tibial nerves, as well as over shoulder points and the chest joints. This tenderness is more marked on the left.

The patellar reflexes are exaggerated. Patient shows a tension and rigidity of the muscles generally. Her mind is depressed, feels a blank, and she fears insanity.

Urinary analysis shows high specific gravity with uric acid.

Treatment was directed toward elimination at first with calomel, followed by sodium phosphate. Salol and phenacetin were given till the temperature became normal, and this was followed up by a nerve tonic.

As this patient had a history of exhaustion and showed poor nutrition, she was put upon olive oil with her meals and milk between meals.

With this medication static electricity was employed in daily treatments. The breeze alone was given for a number of days, then the spark treatment was added.

Patient was under direct care only one week, but continued same line of treatment at her home, and in five weeks time from examination reported only one headache with entire freedom in the interval.

Case IV.—May 8, '03. Patient female, aged 28, *student*. Father living, aged 55, subject to nervous headache and rush of blood to the head.

Mother living, aged 53. Has had stomach trouble and rheumatism for years.

Has three sisters living. One has heart trouble, one nervous trouble.

One brother dead—heart trouble.

As a child well and strong. Never sick in bed. Had the usual children's diseases, she thinks, but they never gave her any trouble.

Menstruation established at 13 years. Normal.

The present trouble began four years ago as a nervous break down. She was very weak, unable to do anything at all for five months. After that went back to college and seemed all right for about five or six months, when she gave out

again, and headache became a prominent and frequent symptom. These would occur once or twice a month.

Headache would start at back of the neck, go up to left temple and left top of head. Pain was a dull, gnawing one. Knows nothing of duration, as she has always taken medicine for the pain. Head is sore afterwards.

At present for four months headaches have been more constant and severe. For last two or three weeks headache nearly all the time.

Is nervous, sleeps poorly. Unable to study for one month. Has an ache at end of the spine after sitting. Has worn glasses for ten years for hyperopic-astigmatism. These glasses changed four months ago. No benefit from this.

Appetite good. Constipation. Stomach easily disturbed. Mucous membranes anæmic, color of face pale. Complains of palpitation and pain in heart. Pulse 66, weak. Temperature normal.

Urinary analysis: high specific gravity, excess of uric acid, hyaline casts.

Examination showed tenderness on pressure over left occipital major nerve.

The deep reflexes—triceps, wrist, and patellar were exaggerated.

In this case there are two factors: the eye difficulty, which is excessive, but whose correction has not relieved the headache in any particular; and the anæmia, which is really the main trouble. The treatment, based upon these facts, consisted of enforced rest, milk, in addition to regular diet, hæmaboloids, salol and static electricity.

This patient is still under treatment. By means of the above care she has been able to take up her university work, and is taking her final examinations. The continuous headache has left her so that for a week or ten days at a time she has had none at all, with an attack once in a while on trying to do extra work. These attacks are much shorter in duration than formerly, and have been relieved by a mustard paste at the nape of the neck. She has taken nothing directly for the pain.

DISCUSSION.

W. A. Ferguson, Sturgis: Headache is frequently caused by eye-strain, mental strain and digestive disturbances.

Dr. Bruce: A headache is a very much more complex phenomenon than many of us appreciate, and it is only by a very thorough knowledge of the physiology and pathology of the subject that we can deal with it in a therapeutic way.

A. E. Bulson, Jackson: It is my experience almost daily to meet with patients who have undergone a long, protracted process of general treatment, along a variety of lines, for headache, nervousness, disturbed menstruation, and other ailments, with no appreciable relief, and who have been sent, as a last resort, to the oculist in order to determine the possibility of the whole trouble being due to some reflex disturbance caused by refractive error.

I wish to emphasize this one point, that every form of refractive error operates, by its reflex action, upon the various functions of the body. You may mitigate the troubles, in a measure, by general treatment, and make the patient quite comfortable for a time, but your hopes form only a delusion, for sooner or later the reflex disturbances return with increased vigor, with the result mentioned, that the oculist is consulted to ascertain if the trouble may not be due to eye-strain.

The effort of nature to produce perfect vision is what causes the disturbances of the various functions, and gives rise to the long train of ailments mentioned in the paper, and these will not yield to treatment, unless the cause is removed by the correction of the refractive error.

I am heartily glad that this subject has been brought up at this time, and in this section, for, as a rule, when these topics are to be discussed, the general practitioner is apt to "Fold his tent like the Arab, and silently steal away,"

so it seems opportune that the attention of the general physician has been called to these important matters.

I often meet with patients who have passed through the hands of some optician, and who are wearing glasses that have no relative bearing toward the real refractive condition present, but on the contrary, wearing those diametrically opposite, thus "adding fuel to the flame."

It is needless to say that it is of the greatest importance that in supposed ocular disturbances, especially of a reflex nature, that the general physician should send his patient to some competent oculist, who is able to make an intelligent and scientific examination of the eyes.

My experience has been that where an error of refraction has been found to exist, that properly adjusted glasses give the desired relief, and the disturbed functions assume the normal. I want to say here that it is not necessary for ophthalmologists to make a defense as such. I think most of you are aware that refractive errors are of various degrees, usually from one to five, and sometimes even eight dioptres. In overcoming these errors few oculists give a full correction in lenses. When I was a student at the New York Eye and Ear Infirmary under Dr. Noyes, whom you all know, I found that he very seldom gave more than one-half or one-third of full correction, and this is the fundamental part of the treatment—to find whether this will overcome the refractive error and the reflex phenomena that follow it.

There may be several degrees of hyperphoria, essophoria or exophoria which an oculist might not consider of sufficient importance to correct, thinking that perhaps the correction of the astigmatism may overcome the trouble. If, however, after wearing the lenses, there is no amelioration of the disturbances, it is the duty of the physician to return the patient to the oculist for another examination.

It may require from three to six months of discomfort to accomplish the desired result. One of the professors at the University of Michigan asked me the question if it was my practice to give patients full correction, and I replied that it was not usual for me to give more than one-fourth to one-half correction, whereupon he remarked that he had been wearing his glasses fifteen months and had not overcome the difficulty. This is simply an illustration showing the amount of time that may be required for the refraction to adjust itself to the new condition. The glasses were adjusted by a prominent oculist in Philadelphia and the professor was satisfied in his own mind that the adjustment was correct.

In New York a great many of the older oculists (Prof. Knapp in particular) give patients full correction or very nearly so, and they very often come back saying they are unable to wear the glasses, but they are invariably told to "put on the glasses and wear them" until they have overcome the unpleasant sensations.

It is common for patients of this kind to become discouraged and think the oculist has made a mistake, and often the physician is in sympathy with this feeling and seeks to relieve the patient by other means.

The general physician should be able to diagnose refractive errors, especially in headaches among school children and in neurotic cases. With this fact once established the remedy is easily applied. I do not claim that all headaches are caused from refractive errors. I often find patients who are suffering from headache whom I return to the general physician.

I have great faith in the use of electricity in cases of reflex disturbances caused by refractive error, and by proper application, it is a valuable aid in the adjustment of the accommodation.

C. H. Johnston, Grand Rapids: Some headaches are incurable by any treatment. Quite a per cent, I think, of migraines are hereditary. I have known headaches to follow along down three or four generations. At the American Medical Association meeting in Columbus four or five years ago, there was read in the Section on Neurology a paper on Headaches. During the discussion one of the doctors convulsed the section with his personal experiences with sick headache. He told of a number of cases of sick headache in his own family for the last three or four generations. He said he had tried all the new remedies as well as the old ones, and concluded that the only treatment he could apply to himself with success was to go to bed, shut himself up in a dark room and starve himself for a day or two until his headache disappeared. So we need not be ashamed when we learn that there are a number of cases we are not able to cure. In such instances we can only follow the advice of the doctor I referred to.

Johann Flintermann, Detroit: I rather hesitate to make a remark upon the topic under discussion. I believe if there is a nervous strain on the muscles of the eye, it is very often due to a neurasthenic condition of the patient. Now, all cases of neurasthenia will have a symptom of headache, and when we have a case of simple headache due to neurasthenia and examine the eye muscles very carefully, I think we will come to the conclusion that this headache will get a great deal of relief by proper use of glasses. I want to say to the oculists, who have spoken before this society with such great confidence and who have given a little rub to the general practitioner, that I know of a great many cases where oculists have advised glasses and where there was relief only for a short time. In some cases no relief was given at all.

Headache means that there is sometning wrong; we are not always able to know whether it is a functional disturbance or whether there is any organic degeneration of the tissue of the brain or the nervous system behind it. I remember a great many cases of serous meningitis where the patient had severe headache, where the cause could not be found. All at once you see the headache increase and finally nausea was observed and constipation, pointing to a very serious disease of the meningeal membrane and the patient died. In such a case there was a chronic meningitis, and such cases ought to be known by the profession in order to account for danger symptoms.

I was called to see a case a few years ago where a woman had persistent headache for weeks and weeks. All functions were normal, and I am very sorry to say I did not have this patient sent to an oculist for examination, to see the condition of the optic nerve, but in cases of serous meningitis the condition of the optic nerve does not always show degeneration. This woman died and the postmortem showed that the woman died of a serous meningitis.

If we have a case of headache, we should look out for syphilis, for tubercular degeneration or for some anæmic condition. Headache very often is a forerunner of epilepsy. There are a great many cases of epilepsy which develop in later life where severe headaches were the premonitory symptoms. It is known that hemicrania is somewhat related to epilepsy. It is a short step from hemicrania to epilepsy, and where we observe hemicrania we should make inquiries as to some history of epilepsy in the family.

Headache may be one of the early symptoms of neoplasm. There are many cases of neoplasm which show only one symptom and that is a headache.

Headache is a very uncertain and very unsafe symptom. It should put us on the lookout to expect severe danger.

The treatment of hemicrania has been touched upon. I feel there is hardly any remedy which will cure hemicrania. Bromides have been recommended. In cases where there is in the family history epilepsy, to relieve attacks of hemicrania, rest and bromide have been recommended. As practitioners we have to do something to relieve the pain and suffering of the patient, and I guess there is no better remedy, although it belongs to the very much despised family of coal-tar preparations, than migrain. Lately I have used with some good results pyramidon.

Headaches may be due to cerebral abscess, uræmia and to different infectious diseases, intoxication, alcoholism, lead, etc. To do justice to the topic "Headache" requires more time than the five minutes allowed by the rules of the society.

T. A. Rutherford, Grand Rapids: I think all that has been said is mainly true in regard to the different varieties of headache with which we have to deal. One thing that I wish to emphasize is the detriment which our patients receive from the use of the coal-tar products which are prescribed so indiscriminately.

Unfortunately I have been a person who for a great many years of my life never passed more than a week without a serious headache. I found that in America and Europe wherever there was an Armstrong or a Rutherford that resembled either side, they all had a characteristic migrain without exception; all varieties of medicine have been tried on these people without particular success. If there was an east wind blowing, there was sure to be a sick headache in the family, no matter how healthy the individual might be.

I have had over thirty years of experience and as Grand Rapids is noted for its specialists every class of eye strain has been first excluded; our specialists are especially good diagnosticians, and, as you may imagine, everything has been brought to bear to ascertain the real cause of the disease, but I have found recently a better way which has not yet been

emphasized but which was given by your essayist and that is the static electricity. I can quote one case in the time limit, perhaps, that will show you what is accomplished in many cases. I have in mind a patient who is thirty-two years old, whom I have known from a child; she was married at twenty and had one child; she has had severe headaches since her menstrual life began; her child was two years old, and it was decided that the headaches were the result of some disease of the ovary; both ovaries were removed. She has been under the best physicians of the city from that time on for ten years. She came to me the first of last September saying that the longest time she had been free from a severe headache was nine days; she had just returned from one of the northern resorts, where she had spent the last two months. Being a woman of means, everything was done that could be done to relieve her; she had no eye strain; no special rheumatic tendency could be discovered; the urine was normal; the temperature normal; she was treated daily for twenty applications and had only one attack of headache, after that every other day for another month and from that time on she has not had a headache; this after ten years—yes, fifteen years—of the best treatment that she could have from a variety of physicians. The only way I have treated her was with the static electricity. I might quote dozens of cases which have been relieved by static electricity as Dr. Solis has recommended.

A. W. Ives, Detroit: I have had patients come to my office who have been treated by me and by others for headaches so severe they could scarcely stand. These patients after taking the static breeze for fifteen minutes to one-half hour go away relieved and practically cured for the time being.

C. W. Hitchcock, Detroit: It is rather presumptive in one who has not heard the paper to enter into this discussion. I simply rise for a few words upon this general subject of headaches, and although it was not my privilege to hear the paper, I will follow the example of others.

It seems to me that this is worth observing, that while it is well known that the static breeze in some cases seems to relieve a headache, it is also well known that galvanism in many cases will do the same, and while gynecologists by treating the ovaries or the uterus or investigating rectal conditions will relieve headaches due to reflex disturbances, we must not lose sight of the fact that headache is not a disease; it has, like epilepsy, a diseased condition producing it. We know but little about it. When the gynecologist and rectologist and all the other 'ologists have finished describing all the possible disturbances which by reflex influences may produce headaches, there will be left a large class of headaches no less persistent but seemingly amenable to no treatment that yet come to us for treatment. One trouble is, we know but little about what the cerebral circulatory conditions are at these times. Some very commendable investigation has been going on, and I think a Cincinnati man has called attention to the close relation between migraine and epilepsy and he has made some very interesting examinations of the urine at the time of the headache and at the time of the convulsion and he advances the theory that these disturbances are caused by paraxanthin in the urine. And so there will be numerous other claims made. We as yet know but little about the diseased conditions and let us hope that future investigations will give us more light, but we should remember all the time that it is only a symptom that we are talking about and not a disease.

C. B. Stockwell, Port Huron: Twenty-three years ago I abandoned the use of mydriatics in testing eyes and got better results without it in the relief of headaches. Lately, while in New York city, I learned that the use of mydriatics was being abandoned, because a greater number of headaches were relieved without than with the use of mydriatics.

J. J. Mercen, Holland: An enlarged lower and middle turbinate is sometimes a cause of headaches. There are a great many cases of headaches, especially those over the eyes, and running to the back of the head, that I think are due to this enlargement. A cauterization will very often relieve this condition altogether.

Willis S. Anderson, Detroit: I would like to call attention to obstructive lesions of the nose, and to sinus disease as a cause of headache. Involvement of the sinuses often gives rise to very severe and persistent headaches. The pain may be orbital, frontal or referred to the center of the head and described as severe and boring in character. These cases are difficult to diagnose. Where one has a muco-purulent discharge from the nose, espe-

cially if it be unilateral and accompanied by obstruction and pain, it is well to think of nasal or sinus disease as the cause of the pain.

F. S. Conover, Flint: Just a word regarding the use of the cycloplegic and mydriatic. Examine your patient carefully under mydriatic or cycloplegic and a physician who has not done this has failed in his full duty. I state this from personal experience. For six years I was a terrible sufferer from sick headache, so much so that three days in the week I went to bed. I consulted oculists in this state and they passed me up. I went on; I met Dr. Colborn of Chicago in 1900. He used the mydriatic; gave me proper correction, and my headache disappeared. I want to say that I believe it is the duty of every physician to use the mydriatic in these cases.

D. E. Welsh, Grand Rapids: I think that headaches are simply an expression and not a disease of itself, and I do believe that 80% of all the cases of headache would be relieved by taking care of eye strain or some refractive error. We must bear in mind there are two conditions of refractive error: First, that which is always ascertainable and that which is brought out under the influence of mydriatic. It is the small errors that give the most trouble and especially those that are associated with lack of muscle balance. If we take into consideration all these causes associated with lack of muscle balance however small and correct them in connection with the amount of latent difficulty, and bring our patients under the use of a lens which corrects the latent difficulty either at once or gradually to their full correction, I think we can remedy all these headaches. I do believe that in cases of children from eight years up to eighteen or twenty, barring myopic conditions, if refracted properly on account of headaches, that within a year or a year and a half, they will get along without any glasses whatever.

PATHOLOGICAL CHANGES FOLLOWING LACERATIONS OF THE CERVIX.*

R. L. MORSE,
Ann Arbor.

From the time of Emmet's first communication on the "Surgery of the Cervix Uteri" in 1869 to the present, the changes following lacerations of the cervix have been carefully studied by numerous investigators with the result that our knowledge of the minute anatomy of the lacerated cervix has been greatly increased. In the present paper, I shall confine myself chiefly to the histological changes in the mucosa of the cervix and their relation to malignancy.

For convenience, the mucosa of the cervix may be divided into two parts, the cervical canal and the vaginal portion. The cervical canal extends from the internal to the external os. It is lined by a single layer of tall columnar epithelium with basal lying nuclei. Beneath these and opening into the canal, are numerous acinous glands,—the cervical glands. The vaginal portion is covered by stratified squamous epithelium. Beneath the epithelium of both the cervical canal and the vaginal portion is a well-defined layer of yellow elastic tissue.

The junction of the columnar epithelium of the canal and the squamous epithelium of the vaginal portion, which occurs normally at the external os, may vary through anomalies in development:

1. Congenital ectropion, where the columnar epithelium extends outward beyond the external os, over the anterior and posterior lips as two tongue-shaped streaks.

2. Congenital erosion, where the canal near the uterine body is constricted and expands outward toward the external os; the funnel shaped cavity being lined by columnar epithelium.

3. Where the lower part of the canal is covered by squamous epithelium and in the upper part changes directly into cylindrical.

These variations in the mucosa are im-

*Read before Section on Gynecology and Obstetrics at the annual meeting of the Michigan State Medical Society at Detroit, June, 1903, and approved for publication by the Committee on Publication of the Council.

portant in that later, through inflammation and irritation, they may undergo changes similar to those conditions arising from laceration.

Through laceration of the cervix there is a loss of continuity at one or more points in the cervical ring. In the spontaneous healing, unless it be anterior or posterior, there is more or less deformity resulting. In the case of bilateral laceration, the anterior and posterior lips are forced from each other in the direction of least resistance, the integrity of the external os destroyed and the cervical structures rolled outward, giving rise to ectropion. As a result, the circulation in the cervix is impaired and the tissues become engorged and swollen. The columnar epithelium of the cervix, with the underlying glands, being thus rolled out into the vagina, are subject to further inflammatory changes by virtue of their unnatural position.

Instead of being in the alkaline and practically sterile condition of the cervical canal, these same structures are now in the acid and infected secretions of the vagina. Sooner or later, through irritation, congestion and infection, there is set up an endocervicitis, which exaggerates the existing condition. Very frequently the process extends upward, giving rise to infective endometritis, metritis, salpingitis, parametritis, and oophoritis. As a result of one or more of these conditions, the size and weight of the uterus is increased, thus forcing the cervix lower in the vagina. The normal excursions of the uterus during respiration and walking further irritate the inflamed cervical structures. The endocervicitis, endometritis and irritation give rise to the so-called "erosions" of the cervix.

By erosion is meant the extension of the cervical columnar epithelium and glands beyond the external os, its normal limit, or beyond that point which is first occupied as a result of ectropion.

This extension is produced in three ways:

1. By a shelving off of the upper layers of the squamous epithelium down to the basal layer, through maceration, and a rotation of the axis of mitotic division from perpendicular to parallel to the surface, thus afterwards producing a simple instead of a stratified epithelium,—a metaplasia.

2. By a gradual shoving back of the squamous epithelium by the advancing columnar.

3. By a complete desquamation of the squamous epithelium and a replacement by the columnar.

The columnar epithelium having replaced the squamous by one or more of these processes, forms glands by invagination, using the papillary depressions as starting points.

The eroded surface appears redder than the normal cervix because the single layer of columnar epithelium permits the blood in the capillaries of the stroma to be seen through it more readily than through the many layers of the stratified squamous.

There are three types of erosion:

1. Simple, in which the columnar cells replace the squamous with no important participation of the glandular apparatus.

2. Papillary, in which there is an increase in the size and number of the cervical glands and a proliferation of the stroma between the glands, giving rise to papillary excrescences.

3. Follicular, in which the underlying glands are distended by their secretions, forming cysts.

As a result of ectropion and erosion there may be a desquamation of the epithelium, either columnar or squamous, with but little inflammation, or the process may be accompanied by marked inflammatory reaction, necrosis of the surface, small cell infiltration, new blood vessels, and exudate, in fact, in all respects an ulcerative process.

When the immediate causes of the erosion, desquamation or ulceration have subsided, i. e., the irritation, endocervicitis and endometritis, there is a tendency for the part to heal. The final result of the healing is either complete, the eroded surface being again covered by squamous epithelium and the glands effaced, or the healing is incomplete, the gland cells remaining in the deeper parts of the former glands.

During the healing process there may be seen in the advancing squamous epithelial border numerous mitotic figures. This border moves forward, replacing the columnar cells, sometimes arching over, the columnar cells disappearing underneath, or by shoving under and lifting the columnar up, giving the picture of columnar epithelium resting upon squamous. When the squamous epithelium reaches a gland it may dip down into the gland, replacing the columnar cells completely, or it may only replace them in part. Again, the squamous cells may not descend into the gland at all, but growing over the mouth occlude it completely or leave an opening through which the contents may escape. It is the occlusion of the gland mouths by squamous epithelium and the consequent distention that gives rise to many of the so-called Nabothian follicles.

Through acute excaberation of the causes leading to erosion, and through irritation, the cervical epithelium may undergo further proliferative changes. The squamous epithelium is thickened, the papillæ lengthened and the masses of cells filling the former gland increased. The simple columnar epithelium may change to stratified and the glandular invaginations become deeper. In these cases we note irregularity in the size and shape of the cells, and their nuclei are larger and hyperchromatic. This is usually spoken of as atypical proliferation and is suggestive of milignancy.

In beginning malignancy we have the above picture of atypical proliferation exaggerated. The masses of epithelial cells extend deeper into the underlying tissues, breaking through the yellow elastic layer, and show strands and fibres of it among the invading cells. As the process advances there is usually some evidence of cornification as shown by the beginning formation of epithelial pearls. There is more or less small cell infiltration along the advancing border and capillary changes, showing reaction on the part of the normal tissue to the invading cells. The diagnosis of malignancy at this time is usually plain.

Looking at the sequelæ of laceration from another point of view, we find that carcinoma of the cervix is far more frequent in multipara than in nullipara, while carcinoma of the body of the uterus is of about equal frequency in both. And among multiparous women those with carcinoma of the cervix have had more children than those not affected, showing that labor predisposes to carcinoma. Now, the common result of labor is trauma and its most frequent effect upon the cervix is laceration. Thus we arrive at the same conclusion from another point of view.

CERTAIN FACTS IN REGARD TO THE INTERMEDIATE GROUP OF ORGANISMS.*

GUY L. CONNOR,
Detroit.

I regret that the paper I am about to present is not of a more practical nature. It does not pretend to touch on more than certain points. As you will see when I am through, there is nothing original in it. Nevertheless the literature on the subject is so scattered and the subject itself is of such recent origin that I thought that those who heard this paper might possibly be interested in it.

There is a group of organisms which for convenience sake and for other good reasons are called by some the "Intermediates." They resemble the Bacillus Typhosus in certain respects and the Bacillus Coli Communis in others.

It was not until the Gruber-Widal reaction was applied, that the various members of this group could be separated much if any.

1888—Gärtner discovered that the Bacillus Enteritidis was associated with epidemic meat poisoning.

1892—Nocard's work on the Bacillus Psittacosis appeared.

1893—Gilbert introduced the terms Paracolon and Paratyphoid.

1896—Achard and Bensaude were the first to apply the term Paratyphoid in a clinical sense.

Not, however, until 1901, after Schottmüller reported several cases did the term Paratyphoid acquire a very general use.

The intermediate group embraces the following organisms:

1. Bacillus Enteritidis of Gärtner.
2. Bacillus Psittacosis of Nocard.
3. Gas producing "Typhoid" of various observers.
4. Bacillus Choleræ Suis.
5. Bacillus Typhi Muriuc.
6. Bacillus Icteroides of Sanarelli.
7. Bacillus Calf Septicemia of Thomassen.
8. Bacillus Paracolon.
9. Bacillus Paratyphoid.

This group can be distinguished from bacilli coli communis and bacilli typhosus without much difficulty.

INTERMEDIATES.	TYPHOID.
Gas in glucose.	No gas in glucose.
No gas in lactose.	No gas in lactose.
No gas in saccharose.	No gas in saccharose.
Coagulates milk—No.	Coagulates milk—No.
Indol—No.	Indol—No.

COLI COMMUNIS.

Gas in glucose.
Gas in lactose.
Gas in saccharose.
Coagulates milk—Yes.
Indol—Yes.

In this country the two most frequently found organisms of the above group are the bacillus paratyphoid and bacillus paracolon. The main differential points are the following:

Paracolon Bacillus
- **Milk, alkaline, after initial acidity, terminal alkalinity in 1 to 2 weeks.**
- **Gas formed freely in glucose.**

Paratyphoid Bacillus
- **Milk, initial acidity, little or no subsequent alkalinity.**
- **Gas production is much less than in the above.**

Paracolon Bacilli—Turns neutral red agar yellow in 24-48 hours and the culture remains yellow.

Paratyphoid Bacilli—Also turns neutral red agar yellow in 24-48 hours but it does not remain so. After 4-5 days it becomes red again. This redness

*Read before Detroit Academy of Medicine, Sept. 8, 1903.

starts at the top of the tube and extends downward. The redness is complete in 2-3 weeks.

The paracolons constitute several distinct species while the paratyphoids constitute one distinct species. All the paratyphoids give typhoids states in man, but only a certain few of the paracolons produce typhoidal symptoms in the human being.

The agglutinative tests have taught us that the paracolon group is made up of several distinct species because they all do not show mutual reactions. The paratyphoids, on the other hand, interact without exception.

Dr. Warren Coleman, Professor of Medicine in Cornell University Medical School, gives us a very interesting classification for the several distinct forms of disease caused by the "Intermediates."

I. Epidemic meat-poisoning type—

Etiology—

(a) Bacillus botulinus (Von Erminghem). This organism is a saprophite. The infection of the meat takes place after the animal is killed. The meat itself is off color, has a bad odor and one can readily tell it is unfit to eat.

(b) Bacillus enteritidis (Gärtner). Dr. Buxton puts this with paracolons. The animal is diseased before death. There is nothing in the sight or the taste of the meat which will tell one that the animal had this disease. Cooking the meat will not always kill this organism, as the temperature in the center of the meat may not be sufficiently high.

Transmission to man—

1. Eating infected meat (commonest).
2. Man to man.

Forms—

1. Gastro-enteric type (common form).
   Vomiting.
   Griping abdominal pain.
   Purging.
   Fever 100-101.
   Duration—
   Mild—1-5 days.
   Severe—months.
2. Typhoidal type—
   Very difficult to distinguish clinically from bacillus typhosus infection.
3. Choleraic type—
   Vomiting.
   Diarrhœa.
   Rice-water stools.
   Muscular cramps.
   Sub-normal temperature.

II. Psittacosis type—

Originally an infectious disease of parrots.

Durham believes bac. psittacosis is a variety of Gärtner's organism.

Modes of infection—

1. Direct from parrots.
2. From inanimate things, as cages, etc.
3. Man to man.

Period of invasion, 5-7 days.

Stationary period—Beginning with sudden rise and terminating with sudden fall of fever.

Convalescence is apt to be prolonged.

Mortality in man is 28-37%.

Bronchial complications are common and dangerous.

Diagnosis—

From Typhoid Fever:
- Abrupt rise and fall of fever,
- Intensity of respiratory trouble,
- Absence of eruption, all favor Psittacosis disease.

From LaGrippe:
- Extremely difficult,
- Source of infection may help one.

III. Typhoid type—

Dr. Coleman thinks it would be better to broaden the scope of etiology of typhoid fever to include the following organisms—

(a) Bacillus alcaligenes of Petruschky.
(b) Bacillus typhosus.
(c) Bacillus paratyphoid.
(d) Bacillus paracolon (certain members which have been called by some beta paratyphoids).

I would now like to say a few words concerning paratyphoid and paracolon infections.

Etiology—

Paracolon Bacillus and Paratyphoid Bacillus.

Geographic location counts nothing in this class of cases, as they have a very general distribution. Cases have been reported on the continent, in this country, in the islands of the Pacific, etc.

Age—Among the cases reported the youngest patient who had paratyphoid or paracolon fever was a baby of 7 months; the oldest a man of 60 years. The majority are in young adults.

Morbid Anatomy—

There are on record three deaths with autopsies. The only ulcer found in the intestines of any of these three cases was one in the ileum. Whether it was an ulcerated follicle the account didn't say. In the other two cases the solitary follicles and Peyers' patches showed no lesions. In Strong's case there was a moderate catarrh of the intestines and a few superficial hemorrhages in the large and small bowel. The mesenteric lymphatics and some smaller lymphatics along small intestine were hemorrhagic. The spleen was enlarged in all three cases. The other pathological changes which were found were those which occur in any febrile condition.

Symptoms—

These are practically the same as those found in genuine typhoid fever.

Complications—

Intestinal hemorrhage.
Furunculosis.
Initial broncho-pneumonia.
Venous thrombosis.

Relapses—

These occurred in several cases.

Duration—

12-84 days.
Average, 20-36 days.

Diagnosis of Paratyphoid Fever—

1. Absence of Widal (not less than 1-40),
plus
2. Positive reaction against a known paratyphoid bacillus,
or
Recovery of a paratyphoid organism from the blood, urine, stools or complicating inflammatory process.

It must be remembered that you can have a mixed infection of typhoid and paratyphoid. Some think that many of these second attacks of typhoid have been in reality paratyphoid.

The fact that the blood of a paratyphoid patient will agglutinate in proper dilutions all varieties of paratyphoid bacilli while the blood taken from a patient ill with paracolon fever will agglutinate none of the paratyphoid organisms and only a certain few of the paracolon bacilli is of importance and interest clinically.

Conclusions—

1. Clinically the picture of typhoid and paratyphoid is about the same. Diarrhœa and termination by crisis is said to be more frequent in paratyphoid than in typhoid.
2. A case is not necessarily paratyphoid just because it does not give the Widal.
3. The disease is usually mild, notwithstanding conclusion 4.
4. Up to February, 1903, there were 84 cases reported with 3 deaths.
5. Absence of intestinal ulceration in two of the autopsy cases and the presence of but one ulcer of the intestine in the third case is of interest.
6. Lastly, this disease seems to be a general infection with no especial localization.

PATHOLOGY OF CYCLICAL ALBUMINURIA—Klebs demonstrated many years ago that post-scarlatinal nephritis had its beginning in the Malpighian glomerules—was in the first instance a glomerulitis. This discovery was taken up and extended by other pathologists until it became established that every nephritis had its origin in the glomerular system. It is possible for this initial lesion of an acute nephritis to take place and proceed no further, the tubular epithelium and connective tissue stroma escaping involvement. The cases cited by Dr. Elliott in this article, seem to demonstrate clearly this localized glomerulitis. This fact accepted, the subsequent cyclical albuminuria becomes merely evidence of a defective glomerular condition, a few leaky glomerules, as yet imperfectly repaired, permitting under the high intraglomerular blood-pressure of the upright position the passage of albumin into the urine. If these views are correct, every cyclical albuminuria must be looked upon as simply a phase of mild degree of a true nephritis, which has preceded it.

This substitutes an organic for a functional explanation of the phenomenon, and views every case as being directly or remotely associated with a genuine nephritis, often latent, localized, and escaping detection, but invariably present. This view does not necessarily imply a serious prognosis. The disease is not active and progressive, but naturally tends to resolution. Under suitable conditions of diet and hygiene the symptom will in the majority of cases eventually disappear. Tessier and Merley were able to follow 28 cases during periods varying from 9 to 13 years. Four of the 28 cases developed Bright's disease, a percentage of 14.28. The possibility of this outcome must be kept in mind in treatment and prognosis. (*Medical Record*, Dec. 12, 1903, by A. R. Elliott, M. D.)

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Editorial

CONCERNING THE RELATION OF THE BRANCHES TO THE JOURNAL.

THE JOURNAL is owned by the combined Branches. Delegates of the latter elected the Council and directed it to establish and conduct THE JOURNAL for the common good. The Council appointed an editor and gave him the needful power. This work is diversified in character and scope, limited only by the possibility of advancing the interest of the Branches, as units or collectively. THE JOURNAL thus has as stockholders every member of each Branch—it is thus owned, and conducted in the interest of the Michigan profession. As the stockholder is directly concerned in the prosperity of his firm, so are members of each Branch in the STATE MEDICAL JOURNAL. It is desired that the sense of responsibility may prompt increasing activity in promoting the prosperity of THE JOURNAL—not spasmodically, but constantly—not in one direction only, but in all possible directions.

As is well known, the character of the articles in successive issues, does much to establish the standing of THE JOURNAL. If these be scholarly, thoughtful presentations of subjects helpful to the profession, the standing of THE JOURNAL is elevated; per contra, if they be careless in diction, illogical in thinking, and the expression of mythical observations and vicious practice, THE JOURNAL suffers damage. It follows that work by any member in stimulating the preparation of the best possible papers, either for Branch or State Society meetings, directly strengthens THE JOURNAL foundation. There is no member but by proper thought might not thus help THE JOURNAL.

Then all over the State are students, whose work could be secured for THE JOURNAL if the proper person interested himself in the task. Further, others might be induced to undertake important studies for the purpose of making THE JOURNAL more valuable, and themselves rising in the esteem of its readers.

It is hoped that every Branch selects its officers with a single eye to their fitness for marshalling every doctor in the county in active, persistent work, in and out of regular meetings. Official position affords opportunities to press work upon all able to perform it—to the end that superior papers, valuable discussions are regularly sent THE JOURNAL. As there are nearly sixty Branch Societies it is desirable that condensation be carried to the limit of clearness and force—a word too many is quite as harmful as a word too little.

All can help THE JOURNAL by correcting proof sent them as soon as received and returning the same to the editor at once. Only thus can the largest profit to all be secured.

Different portions of Michigan present varied problems—members can aid THE JOURNAL in either making thorough study of these and forwarding results to the editor, or interesting others to do the same.

The management asks the aid of each stockholder, in making THE JOURNAL of

the highest possible value to each, and the profession in general.

OUR NEW DEPARTMENT.

Like other editors of the various State Society journals, we have lacked space to present much that would have been of interest to the progressive man in medicine. Careful thought has been given to find a way out of the difficulty. As a result, we introduce, with this issue, a new department, styled, "The Progress of Medical Science." It will be the endeavor of its editors to present in a scientific manner what appears of interest to the modern medical man. They also will keep the profession,—as much as their limited space will allow,—in touch with the salient and profitable features of the medical work done in civilized countries. Fortunately, the editors have access not only to the leading American journals, but also to a certain selected number of English, German and French publications. If this meets with the sanction and the approval of our readers, we will feel repaid.

CATHETERIZATION OF THE URETERS IN THE FEMALE.

If the essential points in the technic of cystoscopy by means of the Kelly instrument, as given in the December number, be faithfully carried out, the operator will be able, after a little practice, to recognize the ureteral orifices and to catheterize the ureters if desirable.

For this purpose it is absolutely necessary for the patient to be in perfect position, and that the vagina be allowed to dilate, before the cystoscope is introduced. Otherwise the base of the bladder, together with the ureteral orifices, recedes from view, and catheterization becomes impossible.

General anesthesia is not necessary. The various steps in the technic as previously given, having been carried out, and the general examination of the bladder having been finished, the ureteral orifices are next sought for. The position of the vesical trigonum, i.e., the triangle formed by the two ureteral orifices and the internal urethral opening, must be constantly kept in mind, and allowance made for the foreshortening which takes place. As a guide to the orifices, the inter-ureteric fold is most convenient. This is a ridge of mucous membrane, slight, but in most bladders quite distinct, running transversely between the ureteral openings. It is found by withdrawing the cystoscope until the internal urethral orifice begins to close over its end, then inserting it about 1 cm. farther, and slightly depressing the handle. If this fold be now kept in view, and followed out to one side, until the barrel of the cystoscope and the median line form an angle of about 30 degrees, the orifice will usually come into the field. While there are marked variations in the position of the openings, this rule applies in a large percentage of cases.

The orifice is often located on a little fold of mucous membrane, more rarely hidden behind a fold of the mucosa. Generally the mucous membrane around the orifice is slightly injected, and often the blood vessels run in a radial manner toward it. The opening itself may stand out as a clear black slit in the bladder wall, or may be indistinct, as expressed by Kelly, appearing as a "water-mark." Often it is immediately located by seeing a few drops of urine spurt from it.

The equipment necessary for catheteri-

zation, in addition to the instruments already listed, are (1) ureteral searcher, (2) renal catheters, and (3) rubber mits.

The searcher is merely a probe with a bent handle. It should be delicately constructed and as light as possible, those made of aluminum being the best. It is used in demonstrating the opening when it is obscure, or when hidden behind a fold of mucous membrane.

The catheters, made of woven silk, should be 50 cm. long. For most work the "renal" catheter is to be preferred to the "ureteral," the opening being in the side and the end being more bulbous. These catheters come in three sizes, respectively, 1.5, 2, and 2.5 mm. in diameter. After having been thoroughly cleaned and soaked in a 1-2,000 sublimate solution, they are boiled for 2 or 3 minutes.

The rubber mits may be conveniently made by cutting the thumb, two fingers, and a portion of the back, in one piece, from discarded rubber gloves. They are also sterilized by boiling.

The desired ureteral orifice having been found, the assistant starts the catheter in the cystoscope, and slips a mit upon the disengaged hand of the operator, the latter not taking his eyes from the orifice. With the protected thumb and index finger, the catheter can be firmly grasped and the point engaged in the opening. As the catheter is gently pushed in, the assistant pulls out the wire stylet, the portion of the catheter passing through the cystoscope and bladder being always stiffened by the wire.

The patient then lies upon the side opposite to that catheterized, and the urine is collected in a test tube or conical glass. Having made sure that the bladder is empty at the beginning, the urine which later collects therein, represents that of the side not catheterized.

If one desires to catheterize both kidneys, it should be done at one sitting. After the first catheter is in place, the cystoscope is removed, and a piece of adhesive plaster fastened to the catheter, in order to avoid any possibility of later confusion. A smaller cystoscope is then introduced through the urethra, beside the catheter, the remaining orifice found, and catheterized as before.

BENJAMIN R. SCHENCK.

NEWS ITEMS.

The Seventh General Conference of Michigan Health Officials will be held Jan. 7th and 8th in the new Medical Building at Ann Arbor. It is expected that every State and Local Health Board Official will contribute to the health interests of the State.

County Society News.

BARRY COUNTY.

The second annual meeting of the Barry County Medical Society was held in Hastings, Thursday, Dec. 3rd, 1903.

The election of officers resulted as follows: President, G. W. Lowry, Hastings; vice-president, Chas. Russell, Hastings; Secretary and treasurer, J. G. McGuffin, Hastings; third year term on board of censors, C. S. McIntyre, Woodland; delegate to Michigan State Medical Society, R. P. Comfort, Nashville.

J. M. Elliott, the retiring president, of Hickory Corners, gave an address on the benefits derived from medical organization.

Papers were read by the following gentlemen: Schuyler C. Graves, of Grand Rapids; J. J. Mercen, of Holland, and J. H. Reed, of Battle Creek.

J. G. MCGUFFIN, Sec'y.

BAY COUNTY.

In the year 1903 our society has had its annual meeting and ten other regular meetings, making eleven in all. The average at-

tendance has been thirteen. The number of members at present time is forty-four. The best of good feeling prevails among the members; and on the whole, I believe it would be difficult to discover a more united and harmonious society in the State. We only regret that a certain number are careless in their attendance. As near as I can ascertain there are thirty doctors in Bay County not members of Bay County Medical Society. Of these thirty, a probable half dozen will become members; some who might join, will not—say another half dozen to a dozen. Others there are who yet hesitate to agree to practice strictly non-sectarian medicine. In the year we have had valuable papers on the following subjects: "Catarrhal Deafness," by C. H. Baker, Bay City; "Management of Patients During Operation," by D. F. Stone, Bay City; "Hydrophobia," by C. T. Newkirk, Bay City; "Tetanus," I. E. Randall, West Bay City; "Infant Feeding," by F. E. Ruggles, Bay City; "Hernia," by V. L. Tupper, Bay City; "Auto-Intoxication," by Mary Williams, Bay City; symposium on "Venereal Diseases," by G. A. Williams, C. H. Baker, W. L. Bishop, of Bay City; J. W. Hauxhurst, of West Bay City; "Acute Rheumatism," by E. A. Wittwer, of Auburn. All of these papers, we consider, are of high and special merit, and the attending members deem themselves enriched by same and the free discussion which followed each. We have in our "Order of Business" one reading "Report of Prevailing Diseases." Under this head any member is free to give a full description of any interesting case he may have under his supervision. By this we have a report of many interesting cases at each meeting which we regard almost as educational and instructive as the paper of the evening. These reports often bring out discussions. Differences of opinion are good naturedly referred to and then forgotten. No contentions, strife or bickerings exist; and truly, then, it may be said we have a harmoniously organized body which meets every month for the free dissemination of much knowledge and free good will.

MORTON GALLAGHER, Sec'y.

CALHOUN COUNTY.

The annual meeting of the Calhoun County Medical Society (see Journal, December, County News) was held in the City Hall at Battle Creek, December 1, 1903. Present, thirty-nine members; admitted eight new members, total forty-seven. This is the largest number in attendance at any meeting in the history of the Calhoun County Medical Society.

Dr. F. W. Robbins's (Detroit) paper on "Hemorrhage from the Bladder," and Dr. Angus McLean's (Detroit) paper on "Congenital Dislocation of Hip," and Dr. James H. Reed on "A Contribution to the Chemistry of Diabetes Mellitus, with Special Reference to Coma and its Treatment," were splendid efforts, eliciting lengthy discussions and requests that they be printed.

After the president's address the election of officers for the ensuing year took place, resulting as follows: President, J. C. Brown, Battle Creek; Vice-President, A. J. Abbott, Albion; Secretary-Treasurer, W. H. Haughey, Battle Creek. This closed the afternoon session.

In the evening the members and their ladies assembled in the dining parlors of the Battle Creek Sanitarium and there partook of a "health banquet," after which a fine program of toasts and responses was listened to with pleasure and profit to all.

W. H. HAUGHEY, Sec'y.

A CONTRIBUTION TO THE CHEMISTRY OF DIABETES MELLITUS, WITH SPECIAL REFERENCE TO COMA AND ITS TREATMENT.

JAMES H. REED, BATTLE CREEK.

I hope I may be pardoned at this time for intruding upon this society and the medical profession at large another paper upon the subject of "Diabetes." It, however, being my life study, (and I might add my hobby), I cannot refrain, first on account of its great importance, as well as the widespread prevalence of the disease and my cherished ambition of being able to fathom and present rational treatment, as well as a cure; and if not a cure, at least a relief which will appeal to the profession. In the limited time allowed me it is not my desire or my purpose to enter into the etiology of the disease or to mark out or define the line of treatment which I follow, as these have been fully covered in numerous papers read by me upon the subject. I shall therefore, without any further preliminaries, jump right into my subject and confine myself alone to diabetic coma, and make no reference whatever to the action of drugs in certain phenomena which present themselves in other kidney diseases with more or less severity and fatality, other than the loss of strength, vitality and vision, as well as the general wasting away which precedes death from diabetic coma.

What is the direct cause of death in diabetes? Acid intoxication and coma. There are certain signs which present themselves weeks, and even months, before coma is established, the presence of acetone and diacetic acid, and can be detected by a very careful examination of the urine. An examination should be made of specimens from several micturitions as well as from the total 24-hour output. Acetone will be the first to appear, followed by diacetic acid, and later on oxybutyric acid. Elliott has suggested, and the same has been demonstrated by me, that these conditions can be detected in the urine by adding a solution of ferric chloride, which produces a rich, wine-red color. In making this test I follow quite closely that eminent authority, Prof. Dr. J. Bergen Ogden, of New York, late Professor of Chemistry, Harvard University Medical School, and for the benefit of my colleagues I append his method as laid down in his "Clinical Examination of the Urine."

"Diacetic acid is a colorless liquid, which gives a characteristic Bordeaux-red color with a solution of ferric chloride. But this color with ferric chloride may be produced by the presence of other substances in the urine, such as salicylic acid, carbolic acid, antipyrin, thallin (Legal and Hammarsten); also acetic and formic acid, sulpho-(thio-)cyanates, and B-hydroxybutyric acid. Diacetic acid is distinguished from these substances by the fact that, if the urine be previously boiled, diacetic acid does not give the ferric chloride reaction, while the other substances continue to give the Bordeaux-red color as before; furthermore, that salicylic acid, carbolic acid, etc., are not extracted from the urine by ether, whereas diacetic acid is soluble in ether.

"As already mentioned, the presence of diacetic acid in the urine (diaceturia) is always pathologic, and should in general be considered a serious symptom. Diacetic acid is frequently found in the urine in diabetes mellitus, in fevers, and also idiopathically as a form of autointoxication (diacetemia). It is of common occurrence in the urine of children as a concomitant of fever (v. Jaksch), and is then generally devoid of serious importance; but in children or adults suffering from diabetes it is a symptom of grave import. Diaceturia is most common in the advanced stages of diabetes mellitus, and particularly in children and persons under the age of thirty. The occurrence of this symptom may be looked upon as a very probable forerunner of diabetic coma and rapid death. The author's experience has led him to make an unfavorable prognosis in all cases of diabetes mellitus (under thirty years of age) in which the urine contains diacetic acid.

"The form of autointoxication of which diaceturia is the chief index, is usually rapidly fatal, being accompanied by such symptoms as vomiting, dyspnœa, jactitation, and coma, without evidence of any other pathologic process."

Great progress was made when it was discovered that diabetic coma was the result of a specific acid, and hence the world of medical research has been enlightened by Minkowski and Kulz, who made the discovery and succeeded in isolating oxybutyric acid from the urine of a diabetic having died in coma. To Magnus Levy we are indebted for the discovery that he was able to separate enough oxybutyric acid and its derivatives per kilo body weight sufficient to produce acid intoxication in a dog. Oxybutyric acid and its derivatives may be produced synthetically or from foods ingested, which latter is most likely to be the case; hence, scientists have been trying to discover the exact and direct cause of oxybutyric acid and its derivatives, and the question which is of most importance to the medical profession is what foods are most likely to produce this result.

Careful experiments with scientifically prepared foods in which first carbohydrates were used, and then a meat diet having shown that acid intoxication produced by an exclusive meat and fat diet disappeared at once when carbohydrates were eaten (*Boston Medical and Surgical Journal*). Attention was then given to proteids, and although von Noorden who claimed in his early investigations that proteids were the source of oxybutyric acid and its derivatives, has since changed his mind as will be seen in his third edition, and has accepted the views of Magnus Levy that proteids were not the source. There is no doubt, however, which has been clearly, clinically and chemically demonstrated that after you exclude carbohydrates and proteids the fats remain by exclusion the main source of acid intoxication. The all important point, then, which presents itself is, is this produced by animal or vegetable fats. Hagenburg claims a decrease in acetone following a bacon diet. Schwarz notes an increase of acetone from the use of butter. Both of these authorities are upheld by Grube in his investigations. Nevertheless, as olein and butyric acid are found to such extent in butter it is very natural to believe that oxybutyric acid intoxication is more apt to be produced from vegetable than animal fats. At the same time, however, we must not loose sight of the fact that this has never been positively traced to any special variety of fat. If such was the case it

would be an easy matter for us to treat the disease.

Accepting, then, as a fact that diabetics die in a state of coma superinduced by an intoxication of acetone, diacetic and, finally, oxybutyric acid, our first step should be to keep the patient from taking cold, avoiding all fatigue, putting him to bed and causing him to drink water freely with large doses of bicarbonate of soda, with colonic flushings and laxatives; then if coma appears stimulants should be administered. I have used glycothymoline as an alkaline for flushing with a great deal of satisfaction, and would recommend as a *denier resort,* whiskey as a stimulant to be used, never resorting to brandies or wines, and the whiskey should not be given except by direction of the attending physician. Abilena water, which is, by the way, the only natural cathartic water in the United States, is to my mind the best laxative which can possibly be used, as it serves two purposes at one time, giving the patient the benefit of a stomach flushing, and the bowels an active cathartic.

I have recently made experiments with oxybutyric acid from the kidney of a patient who died in Chicago in diabetic coma. The kidney was infiltrated slightly with oxybutyric acid which was reduced to a solution and treated with a 2%, 4% and 6% solution of formaldehyde. I found that the acid was entirely destroyed by the use of the 6% solution, therefore I suggest prophylaxis as of the greatest importance, and when the presence of acetone is discovered to give the patient a urinary bactericide containing formaldehyde, and in my practice have used urystamine which is of the ammonium methaldehyd lithium series, with which, in approaching coma, as an adjunct with other treatment I have succeeded in arresting coma, and patients have continued to improve after passing through this ordeal.

Another very important remedy which I have used with considerable success is urispetin, which is a solution of lithium methaminate, in conjunction with corn silk and couch grass. The absence of ammonia in this preparation makes it of vital importance in the treatment of certain special forms of diabetes, for instance, cerebro diabetes. In order that I may not be misunderstood, please let me return to where I have suggested prophylaxis as of the greatest importance, and for fear that my meaning may be vague in this term of preventive medicine, I will say that I do not wish to be misunderstood as giving these remedies until the patient shall be under the influence of 2%, 4% or 6% of formaldehyde. As this would be not only out of the question, but utterly impossible, therefore as all diabetics pass through a progressive siege until they finally die in coma, unless some fatal accident should occur to stop the ordinary trend of the disease, therefore I suggest these remedies as a prophylaxis in order to prevent the formation of acetone, diacetic and oxybutyric acid. There are other conditions beside these which indicate a urinary bactericide, such as the presence of pus, mucous, gonnococci, and where the patient has been allowed to follow his own taste in the manner of food, and who on account of an abnormal appetite for sugars and starches lives chiefly or largely on carbohydrates, and is also addicted to large quantities of malt liquors, and those who have been restricted exclusively to a meat diet. In either of these two last named cases, or the existing previous named condition, a urinary bactericide is indicated.

Acetone and diacetic acid are always present in the urine of all advanced cases of diabetes, and their presence is not only alarming, but also of the utmost importance. The reaction by the ferric chloride test may be ascertained on examination of the urine for weeks and months before approaching coma, yet at the same time they positively indicate the approach of this much dreaded condition. It has been my good fortune in a few cases to notice that both acetone and diacetic acid have disappeared from the urine as the patient improved under rigid dietary and medicinal treatment. It is my opinion that neither acetone nor diacetic acid is found in the cases of transitory glycosuria. Generally preceding coma from three to five days the patient will complain of chilly sensations creeping up and down the back, as well as chilly sensations in other portions of the body. The skin, different from the usual dryness of the diabetic, will be covered with small reddish spots with extreme harshness and dryness, high fever and languor, therefore it is necessary to follow the line of treatment herein described, which will to a great extent reduce the quantity of the urine secretion and urge the functions of the skin by profuse diaphoresis, and in this connection I often use subcutaneous injections of pilocarpine and the administration of antipyrin, which will in a considerable degree lessen the quantity of urine and superinduce sweat.

I also resort to a rectal medication of bicarbonate of soda and opium, although I am bitterly opposed to the use of opium in any form internally. If the extremities become cold mustard plasters should be bound to the soles of the feet and the limbs rubbed thoroughly with dry mustard. Bicarbonate of soda should be administered

hypodermically at frequent intervals, whereas normal saline solutions, bicarbonate of soda and glyco-thymoline should be given per rectum. The bicarbonate of soda when hypodermically administered should be injected into the venous system or beneath the skin, and as draughts of water are absolutely necessary, I use Lincoln Spring water, of Saratoga Springs, New York, which is a saline water particularly adapted to diabetics.

I will at an early date furnish further investigations along this line, but at present will content myself and leave the subject with you, having covered the one point I intended in presenting this paper. I thank you very much for your attention, and sincerely hope that you will discuss my paper thoroughly.

HEMORRHAGE FROM THE BLADDER.

FREDERICK W. ROBBINS, DETROIT.

The incidents in life fix attention, stimulate mind, form opinion and clarify judgment. At this time it is not wise to discuss all the questions that arise in your minds in connection with the subject of urinary hemorrhage, but it may not be unprofitable to speak of some phases of the matter as they have from time to time been presented to me as the result of incidents or experience.

Hemorrhage from the bladder may have its origin in the bladder itself, or the normal bladder may be the receptacle for blood entering it from the upper urinary tract or from the prostatic urethra. From the prostatic urethra it may come as the result of traumatism, tubercular or malignant ulceration and acute congestion or inflammation. In the young, that is those not subjects of hypertrophy of the prostate gland, prostatic congestion or inflammation is usually secondary to gonorrhœal infection and the resulting hemorrhage is not sufficient to bring it within the scope of our paper, for the blood, a few drops, may be passed out, enter the urethra at the termination of the urinary act and not have been received into the bladder at all.

Ulcerations, inflammatory or tubercular, of the prostatic urethra may, however, be followed by severe hemorrhage into the bladder and unless one makes his diagnosis with the aid of the urethroscope, he is liable to mistake the origin of the blood. I have seen and cured ulcerations in this part of the urinary tract, but have not seen such a hemorrhage as just mentioned. One condition noted may be of interest in this connection, as it was to me while studying the cases of several men whose symptoms I attributed to inflammatory diseases of the veru montanum.

Case 1. One of these men, Mr. E. G. L., had a history, several chapters of which were devoted to urethritis. He was extremely neurotic; was frequently wakened a dozen times at night with rigid painful erections which urination would partially relieve. His business was in jeopardy from loss of sleep. He had been operated on supra pubically, presumably as an exploratory measure. One surgeon had suggested perineal urethrotomy. I could see nothing in the bladder abnormal, but the caput gallinaginis was much larger than any I had seen, was sensitive to the touch and had a greyish instead of the soft velvety appearance which we learn to look upon as normal. I believed the thick greyish condition due to increase of fibrous tissue resulting from chronic inflammation. After due consideration, with a special scissors made for the purpose, I cut off a portion of the protruding caput. There was no immediate unpleasant symptom, but after five days the bladder filled with a large blood clot. This was evacuated while urinating after being thoroughly broken up with a steel sound, and the hemorrhage was checked by introducing and leaving in place a large sized catheter.

Hemorrhage in patients having an enlarged prostate frequently follows catheterization even though such operation be done with the greatest care. Such bleeding usually occurs from prostates markedly congested and the loss of blood would not, in itself, be an evil, but when the bladder is sceptic an injury to the prostatic mucous membrane from a catheter or stone may result in severe ulceration or prostatic abscess.

Malignant disease of the prostate in my experience is not a very rare affection, and as I recall to mind six cases of my own, and at least four in the practice of Dr. T. A. McGraw, within the last few months, in several of them hemorrhage was a prominent symptom, indeed I am inclined to believe that in the absence of bladder growth or stone, hemorrhage of a marked degree in cases where the prostate is enlarged to a considerable extent points to malignant disease and precludes any operation for radical cure.

Speaking of conditions in the bladder proper causing hemorrhage, five may be mentioned, namely: calculus, in which case the symptoms, methods of diagnosis and proper treatment are well known to all; hemorrhage caused by too rapidly emptying an over-distended bladder, acute cystitis, tubercular ulcerations and tumors.

Probably few of us have seen hemorrhage due to catheterizing an over-distended bladder and yet such severe hemorrhages have occurred that this possibility, when coupled with the knowledge that

such bladder is always congested and most liable to become infected, should always lead to the same action on our part that the certainty of hemorrhage would demand, namely: the introduction of a small catheter with full antiseptic precautions, allowing four ounces of urine to flow out, then replacing two ounces of this by injecting two ounces of boric acid solution, wait a few moments and repeat the procedure and then thus continue until the bladder is empty. The fact that the patient is relieved when the bladder tension is lessened will make haste unnecessary.

The acute form of cystitis resulting in bladder hemorrhage differs so much from that which may complicate tuberculosis or tumor, that it may be mentioned and dismissed.

Tuberculosis with hemorrhage is always accompanied by chronic cystitis, while tumors may be growing for years before infection intervenes, therefore, when occasional hemorrhage is noted and the urine be without pus cells, the question of diagnosis is of the greatest importance, and first an effort must be made to determine whether the trouble is in or above the bladder. No diagnosis should be attempted without first recording the history of the patient, the subjective and objective symptoms, the results of urinary and physical examination, the cystoscopic appearance of bladder and often the results of segregation.

CASE 2. In February, 1896, I saw Mrs. T., age 23, at the request of Dr. J. A. Winter. Her family and personal history was good. She was confined in February, 1895, and healthy until September, 1895, after which date she had had occasional attacks of hematuria, passing at times clots and at others pure blood. Later some pus was found in the urine. Cystoscopic examination showed summit of bladder red and capillaries somewhat congested. In region of trigonum near left ureter was a greyish floating mass held by a small pedicle. This was plainly seen at each of the two sittings. Bleeding did not cease and a week later I dilated the urethra and introducing finger felt several small papillomatous bodies not as large as they seemed seen through the cystoscope, their summits incrusted with phosphates; after thoroughly curretting with the finger nail all pain and bleeding at once ceased. She gained flesh steadily until I last saw her, May 23rd. Two years later Dr. Winter reported that he had confined her again and that she was perfectly well.

CASE 3. Papilloma of bladder. G. A. McB., age 67, consulted me May 1st, 1901. Had been in perfect health until May, 1900, when he had an attack of hematuria lasting for three days. Had no further attack until March 15th, 1901, and again April 26th, 1901, lasting for three days. He complained of a dull pain over the bladder and had lost seven pounds in weight. Passes red blood at first part of urinary act. Rises once or twice at night to urinate. There is no residual urine. Lobes of prostate smooth and slightly enlarged. Thompson searcher shows bladder sensitive, urine turbid from pus. Cystoscope causes bleeding sufficient to render examination unsatisfactory. Small piece of growth withdrawing on cystoscope shows typical papillomatous formation. May 9th opened bladder supra pubically and removed tumor pedunculated from near left urteral opening one inch in diameter; carefully curretted base and cauterized with paquelin cautery. The rest of bladder surface was normal. Supra pubic drain perfectly carried off urine until removal on the 12th, after which time urethral catheter kept patient comfortable. Left hospital May 27th. December, 1901, he reports that in July, after operation, on one occasion he had passed a little blood. There remains a small amount of pus in urine. In September, 1902, reports that three times he has passed a clot the size of a pea at end of urination; a cystoscopic examination at this time shows a papillomatus growth or series of growths of considerable extent at the summit of the bladder, but now, November, 1903, there has been no hematuria, but he is beginning to have some distress in bladder which his physician writes he thinks due to the enlarged prostate, but which I am inclined to think is caused by the returning growth.

Sir Henry Thompson says that untreated papilloma of the bladder always leads to death, and while in his series of cases a considerable proportion have returned, a number have been permanently cured. It is interesting in this case to note that the removal of the original growth practically removed all hemorrhage but the recurring growth although shown by the cystoscope to be much larger than the original, has as yet developed no hematuria.

Another lesson to learn from this case is that tumors of the bladder often have as their only symptom hematuria, and that it is characteristic of them that long intervals may elapse in which there is no abnormal condition of the urine. And again, that the cystoscope should always be employed to aid in diagnosis whenever any serious condition of the bladder is suspected. I know that there are some conditions that will prevent a satisfactory cystoscopy and that tubercular condition should not be irritated, and yet so often has it been my pleasure to clear up obscure diag-

nosis with its aid, that I am constrained to believe that many in our profession neglect too long obtaining valuable information. I have known of operations having been done on the bladder which would never have been done had the cystoscopist been consulted. Have you not seen patients that might have been helped by operation had you known in time that symptoms present were due to a remediable disease?

When we come to consider hematuria of renal origin we enter upon the most interesting portion of our subject, so because of the difficulties of accurate diagnosis, which difficulties are now largely overcome, and because of the judgment required in the treatment of each individual case.

Several years ago I was called to make a cystoscopic examination for a physician who believed his patient to have severe bladder disease. The bladder was perfectly healthy, but from the right ureter there was flowing a tiny stream of blood, and with the attention called to the right kidney the doctor had no difficulty in palpating a nodular kidney which was undoubtedly sarcoma. This patient was a woman of about forty years of age, and although the kidney was removed, died later, I learned, from secondary growths.

Having mentioned sarcoma, let me report Case 4, Mr. I. W., age 72. I had treated him in 1894 for renal colic. In 1896 he had an attack of hematuria lasting for a few days only. In April, 1897, he entered the office one day saying that he had passed red urine in morning. That afternoon I found it normal; no albumen, casts or renal cells, and a week later the urine was reddish brown containing blood cells; the right kidney was at this time enlarged, hard and lobulated, reaching to crest of illium. He has been growing weaker for some time. In July, 1901, four years since last report, the tumor was somewhat larger than in 1897; there had been occasional hemorrhage during this period but patient had regularly attended to his business, and died in April, 1902, of renal sarcoma. The left kidney was normal and some normal kidney tissue remained in the lower part of the right; but the main structure was displaced by a sarcomatous growth the size of a baby's head. Now I wish to submit these points: The colic pains noted in 1894, eight years before patient's death, were possibly due to blood clots caused by sarcomatous growth. Secondly, if I had removed the kidney when diagnosis was first made in 1896, in view of the fact that no secondary growths were discovered at death, I know of no reason why he should not have been living yet. He died at the age of 79, six years after the tumor was first discovered. At that time his age was 72 and he decided to take his chances without operation. I leave it with you whether or not he increased his expectancy thereby. It is interesting to note that this sarcoma did not kill its victim for more than six and probably more than eight years after its inception, while the books give the limit of life as not far from three years.

Tumors of the kidney, whether malignant or benign, are accompanied with little or no pain unless the ureter becomes temporarily choked with blood clot, and always this possibility must be kept in mind when intermittant painless hematuria is noted coming from the kidney.

Tuberculosis of the kidney, as of the bladder, is apt to be accompanied with a pyelitis and may or may not be one manifestation of a general tuberculosis. Many doctors have been inclined to look upon a chronic pyelitis as tuberculous even if many examinations of the urine are made and no tubercle bacilli found. It has seemed to me that patient observations will usually be rewarded in doubtful cases by the discovery of the bacillus if tuberculosis be found, but if not and both pyelitis and hematuria are present, inoculation tests should be made. If the pyelitis is secondary to a cystitis, no tubercular nodules being discovered in the epididymis, testes, prostate or seminal vesicles, the kidney trouble is probably not tubercular. If urine from the upper urinary tract contains tubercle bacilli it is of great importance to determine whether the disease has attacked one or both kidneys. This can be done by catheterizing the ureters, a difficult matter to one not specially trained, or by the Harris' segregator. There are occasional difficulties in using the segregator, but I am convinced of its usefulness. If it be found that one kidney be tubercular and the urine from the other free from disease, the diseased kidney should be removed and with it the ureter if that be nodular. Usually these cases do not come to the surgeon until the kidney is plainly palpable, but the diagnosis should, if possible, be made before this late period. If both kidneys be diseased, surgical treatment is unwise, but attention given to general conditions will in many cases much prolong life.

At the meeting of the State Society in 1897 I reported three cases of hematuria. One of these patients, Case 5, Mr. F. C. P., traced his attacks of hematuria back to 1884 following an attack of malarial fever. When I first saw him in February, 1897, he had been losing blood for three weeks continuously. Pulse, 116; temperature, 98.6°; eyes, puffy; eye-lids, twitching; very nervous, not being able to sit still more than for a few

minutes at a time. Pain over kidneys; testes suppurating, nodular; tuberculosis in urine. Diagnosis, tuberculosis of urinary tract. The only operation done was to remove a tubercular testis. General treatment has been given at intervals since. Has occasional attacks of hematuria. Is not well, but gained probably thirty pounds of flesh since he first came under my care and is doing hard carpenter work continuously now nearly ten years after the beginning of his tubercular disease. I mention this case to show that tubercular conditions of the urinary tract, even if seemingly discouraging, are not hopeless even if the patient has not the means to go to Arizona or Mexico, and that in these cases surgery should be considered secondary to medical treatment.

CASE 6. Now I wish to report the case of Mr. A. J. W., age 52. Well until 1900, when noticed that the urine was turbid and a few days later bloody. Much of the following summer urine seemed normal. Went deer hunting in October for three weeks and soon after going, passed blood; never passed stone or gravel; urine contains blood cells to color urine, and pus cells; albumen sl.... The next day, December 19th, 1902, much blood in bladder, but after washing out bladder, no blood could be seen coming from either ureter, nor were stones, tumors or ulcers seen in bladder. Bladder mucosa was moderately congested in spots, kidneys were not palpable. His attacks of hematuria always followed severe exertion. January 17th, 1903, good X-ray picture negative; urine bloody; pain in back slight. Segregator shows much blood from left ureter and from the right normal urine. I had a letter from him November 19th, saying that he was much stronger, had been hunting and carrying in deer for three weeks, but still is subject to his hematuria.

CASE 7. Mrs. J. H. C., a woman of middle life, has been periodically passing considerable quantities of blood. Examined her July 15th, for Dr. McGraw, finding urine from left ureter discolored with blood cells while that from the right seemed clear but contained a few red cells. Urine received from this patient recently was normal. She has never had pain or tenderness over kidneys.

CASE 8. February 4th, 1896. Mrs. G. P., age 53. Married. Weight normal. General health good, with the exception of rheumatic pains and a torpid liver for the last two years. Status præsens: stools clay colored, conjunctiva yellow, urine brown, containing blood cells. At times blood is profuse, at others urine is clear. No pain, no blood clots; kidneys not palpable; cystoscope shows healthy bladder and blood coming from right ureter. Ergot and gallic acid were given with no effect. Then followed treatment by the salicylates, colchicum and sweet oil, followed by gradual improvement. March 24th there was blood in the urine, followed by several days of clear urine; then one passage of urine bloody and the next day clear. April 6th conjunctiva clear, reports feeling as well as ever. Still drinking large quantities of Geneva Lithia water. May 25th, perfectly well; urine normal. Passed from my care; and again seen November 20th, 1903; says that she with intervals of clear urine, has passed blood much of the time for last six years. Fingers and toes gouty. Has been in fairly good health, not lost flesh but is rather anæmic and at times has distress over kidneys. First diagnosis was rheumatic or gouty hematuria. Think it would have been wise to have continued general plan of first treatment and now if she does not soon recover should recommend exposing and making an examination of kidney and possibly doing Edebohl's operation.

These are interesting cases both from the standpoint of diagnosis and indications for treatment. The only one of the three which showed hematuria after exertion and pain over the kidney, therefore possibly due to stone in the kidney, was examined, a good picture taken and no shadow discovered. Pain on pressure over kidney or ureter, hematuria on exertion and crystalline debris in urine points to stone. Renal colic is not frequent except the ureter be occluded causing intra pelvic pressure, or the stone, gravel or crystals be moving along the ureter. If renal stones are suspected an X-ray photograph should always be taken, and if made by an expert it will be discovered if present. But if one not an expert attempts to find a stone he will plunge the surgeon into a greater cloud of darkness than was his before. Removal is the only treatment for stone. It must always be remembered that a few crystals of uric acid or calcine oxalate passing the ureter will be accompanied by a small amount of blood and most severe renal colic. This sum total of symptoms therefore should lead to the institution of a most thoroughly alkaline course of treatment before subjecting patient to X-ray or surgical treatment.

Hematuria not due to stone, tumor or tuberculosis, has as its cause congestion or inflammation. These conditions may be due to irritating drugs, malarial poison and a number of other conditions and then we must make our diagnosis largely by exclusion. Cabot mentions a case of hematuria from movable kidney. The patient, a

woman of 43, was anæmic, no abnormal conditions other than a loose right kidney was found. Placing in bed with elevated hips caused bleeding to cease and this returned on rising. If bolstered up in bed for 20 minutes a day, blood was noticed in urine. After operation fixing kidney, there was no more trouble. He thinks the congestion not due to twisting of pedicle but slipping down of the kidney whereby tension is applied to the vein, not permitting return circulation.

DeCosta, post mortem, did find a twisted pedicle accounting for hematuria in one case.

Granville McGowan reports a case of a man, age 35, with good general health, who had a profuse painless hematuria, eight years previous, which had ceased without treatment. Later this had returned with pain but the pain and frequent micturitions had subsided, although bleeding was continuous. Patient anæmic and weak, had lost 30 pounds, but there were no kidney symptoms. Cystoscope showed blood from right ureter and clots in the bladder. The consultant had no faith in the cystoscopic findings and demanded a supra pubic opening, which showed bladder normal. Operation on kidney did not show the expected papilloma in the pelvis of the kidney, but a congestion of entire kidney showing no pathological conditions with the microscope.

The previously-made examination of the urine will exclude or not chronic nephritis, which is not seldom the cause of hematuria.

In conclusion, it is necessary to first distinguish the hematurias of the prostatic urethra and those of renal origin from those of the bladder.

Hematuria from the bladder may be probably diagnosed by the appearance of the hematuric urine, by rectal examination of the prostate, by careful use of the searcher and the internal use of the cystoscope. The cystoscope and segregator in their proper sphere are absolutely necessary instruments in order to show not only the condition of the bladder, but the kidney from which the hemorrhage may come.

Renal hemorrhage may be present and the cause either plainly evident or practically certain as the result of careful and complete examination, or problematically certain, as a result of diagnosis by exclusion.

The treatment in the first two classes of cases is based on well settled authority and may be medical or surgical, palliative or radical. That of the latter class must depend on the best judgment of the surgeon and physician and may be brilliantly effective or negative in its results.

DISCUSSION.

A. W. Alvord—The paper was very interesting to me—not that I know so much about the subject with which Dr. Robbins ably deals, but that it is one which has covered some of the deficiencies in our medical education and medical practice. It has revealed to us the fact that many things which we were not capable of diagnosing in the past can now be discerned and proper assistance applied, whether it be medical or surgical. I was much pleased to note the doctor's criticism of the tendency toward surgery in the treatment of some of these cases. The cystoscope is a great assistant in the proper management of these diseases. I have used it quite a little and get much light by its aid. As for the segregator, I know but little concerning it.

A. J. Abbott—I would mention a case I saw operated upon by Dr. Harris, the inventor of the segregator, in which he was unable to find anything as a cause of the hemorrhage. He opened one of the kidneys and found nothing. He said that this was the sixth case where absolutely nothing was found, yet the hematuria was cured by the operation. I had a case of my own, a man 84 years old. I found a greatly distended bladder. By the use of the catheter I succeeded in getting away a considerable amount of the urine. The next day I found the bladder quite full of blood and in spite of every effort to get away the urine by the catheter my efforts were unavailing. I finally succeeded in getting away the urine. The next day the bladder was again full of blood. I called a consultation and decided to do a supra pubic operation; found the bladder walls thick, a granular mass all over the bladder. There was no history of much bleeding, and I did not feel safe in allowing the bladder to be closed, so put in supra pubic drainage. This was over six months ago, and the old man still lives.

Geo. C. Hafford—There is one point that Dr. Robbins calls attention to and asks us to give our experiences, and that is hemorrhage following the emptying of a distended bladder. Personally I have seen that take place but once and then not at all seriously. I have seen many cases where the bladder has been largely distended for a long time, cases where, following the teachings of books and instructions received while in college, you would certainly expect hematuria. After seeing so many cases, and never a case followed by hemorrhage into the bladder, I may be pardoned if I doubt the danger which might occur. In regard to emptying the bladder slowly in following the doctor's instructions for emptying a few

ounces at a time, and refilling with boric solution. though undoubtedly good advice it is rather impracticable at times, especially in a country practice, where we may be called many miles without knowing that we will meet this kind of a case.

DICKINSON-IRON COUNTIES.

The annual meeting of the Dickinson-Iron Counties Medical Society was held Dec. 15th, 1903, at St. George's Hospital, Iron Mountain. B. W. Jones, of Vulcan, was elected president; Wm. Veenboer, secretary and treasurer.

S. EDWIN CRUSE, Sec'y.

EMMET COUNTY.

The Emmet County Medical Society held its annual meeting on Dec. 2nd, 1903, at Petoskey. Members present: H. T. Calkins, G. W. Nihart, John Pedden, E. A. Runyan, L. W. Gardiner, J. J. Reycraft and G. E. Reycraft.

President—H. T. Calkins, Petoskey.

Minutes of last meeting read and approved. There being no papers the society proceeded to election of officers for 1904.

The following officers were elected:

President—H. T. Calkins, Petoskey.

Vice-President—E. A. Runyan, Harbor Springs.

Secretary—G. E. Reycraft, Petoskey.

Treasurer—G. W. Nihart, Petoskey.

Censor for 3 years—A. E. Stealy, Pellston.

G. E. REYCRAFT,
Secretary.

GENESEE COUNTY.

SYPHILIS.*

F. H. Callow, Mt. Morris: Gave the history and a description of the disease, emphasizing the fact that in all its protean manifestations the effects of syphilis are the result of one and the same series of pathological causes, and it is the action of these pathological conditions upon the tissue or organ in which they are located that produces its different manifestations.

In speaking of hereditary syphilis, he said: Is it not frequently the case that a patient, having been pronounced cured of the disease, will beget children who prove to be syphilitic, or if not actually syphilitic at least of such low vitality as to be terribly handicapped in the struggle for existence, many of them yielding up their lives to the diseases incidental to childhood, others struggling along to maturity and handing down their debilitated constitutions to another generation?

The late Prof. Gross propounded the theory that inherited syphilis is the real source of most of the morbid action now afflicting mankind. If this be true, and no one can deny that there is much of truth in it, is there not some way by which the public conscience mav be aroused and people be brought to understand that if syphilis in the acquired form is rarely fatal in the inherited it is a veritable "slaughter of the innocents," and one of the principal causes of the race suicide of which we hear so much at the present time? Cannot something be done—perhaps by educating the people regarding the remote effects of venereal diseases in general—to protect them from the effects of this disease, which so relentlessly dogs the footsteps of mankind, and in which the sins of the fathers are literally "visited upon the children unto the third and fourth generation."

H. R. NILES, Sec'y.

*Abstract of paper read before Genesee County Medical Society, Nov. 7th, 1903.

INGHAM COUNTY.

The annual meeting of Ingham County Medical Society was held Nov. 12, 1903, at the residence of J. F. Campbell, Lansing. Eighteen physicians were present. The following officers were elected:

President—H. A. Haze, Lansing.

Vice-President—J. F. Campbell, Lansing.

Sec.-Treas.—L. Anna Ballard, Lansing.

After an able address by the retiring president, S. H. Culver, a bountiful repast was served, followed by a program of toasts, with F. W. Shumway, of Williamston, as toastmaster.

BANQUET.

"Our Society"—Mrs. H. A. Haze, Lansing.

"The State Society"—C. B. Burr, Flint.

"The Pioneers"—W. W. Root, Mason.

Solo—"The Song that Reached my Heart" (Jordan)—Mrs. Mina Barnes.

"The Fads"—C. L. Barber, Lansing.

"The Ups and Downs of a Doctor's Life"—Mrs. F. A. Jones, Lansing.

"Our Honorary Members"—Dr. Campbell.

Music—"Elaine" (Bartlett)—Mrs Barnes.

L. A. BALLARD, Sec'y.

PRESIDENT'S ANNUAL ADDRESS.

S. H. CULVER, MASON.

In a recent medical journal may be found an article upon "The Personal Equation in Medicine" aptly describing some of the difficulties that beset the practitioner of medicine.

"The practice of medicine is singular in that it almost necessarily isolates its devotee from his fellows, and peculiar in that it depends upon a kind of knowledge which is not common and bears no relation to the ordinary affairs of men. Neither are the causes of success or failure to be estimated by any general standard. The most trifling case of illness, even, presents so wide a divergence between the abstract entity involved in the perverted physiological process and the illness as a whole, conditioned by all that enters into the environment of the individual who is ill, that to estimate the one by the other is impossible; as it is futile to attempt to determine by the history of an illness in one case, exactly why another, apparently similar, has so different a course.

"More than in any other profession, the physician is separated from his fellow-workers. He has to meet the exigencies of ordinary practice alone, and often the most extraordinary difficulties have to be encountered without the aid of anyone. Again his relation to those he is called upon to treat is peculiar and difficult. Conscious of the absence of certainty in the methods of diagnosis and treatment of disease and the number of factors which, although their existence can seldom be definitely predicated, may enter into the etiology or modify the course of disease in any individual, yet he must always, for his patient's sake, and to retain the confidence of the family, appear absolutely certain of his ground; precise and sure of the wisdom of every step taken.

"There is before him all the time the knowledge of the different standpoint from which the layman, through the influence of superstition and credulity, looks upon medical practice; so that he cannot appeal to his patient's judgment to help him out, because the uncertainty on his part, born of a knowledge of the limitations of medicine, appears and is almost sure to be considered by his patient as evidence of ignorance and incompetence.

"He finally grows into a mental habit, more or less narrow, according to his original bent and the breadth of his training so that his judgment is practically uninfluenced by anything outside of the experiences which condition his own environment. His conclusions meet the test supplied by the exigencies of his practice. His patients get well as a rule, and when they do not he recognizes that after all, human intelligence is limited and disease is sometimes bound to be fatal.

"Then, too, if the physician has been successful to more than the ordinary degree, he is bound to become somewhat autocratic, to resent any questioning of his authority or difference of opinion, so that, while he may seek eagerly the enlightenment which comes from the written records of experience at a distance, he has little or no confidence in that of his fellows when they reach different conclusions from the same premises.

"He comes to wonder how such men ever attain any success in practice and while he pities those who are under the care of such poorly equipped physicians, he comforts himself with the knowledge that the tendency of all acute diseases is toward recovery. It is so easy for us to recognize the skilled physician in the man whose methods are the same as our own and so difficult to see any evidence of trained knowledge in those who differ from us."

Is the picture unreal? Is it not too true that the very habit of individual and independent thought, so necessary to the practical physician, is a powerful factor in the well-known lack of harmony in the ranks of the medical profession? And why, may I not ask, if such fact is to be admitted, should not such an unfortunate condition be changed for that which is better and more conducive to harmony and unity of purpose?

It is a belief founded upon a limited personal experience, we admit, that the fundamental cause for much of the lamentable inharmony in the ranks of medical co-laborers, is a neglect of the study, of the appreciation and the lack of application, of the fundamental principles embodied in the code of medical ethics.

Like unto the Mosaic laws on tablets of stone brought down from the Holy Mount to the Jews for their rule and guidance, so should the principles of the code operate as the law and guide among practitioners of medicine. Every departure from its benificent teachings has been the cause of weakness and loss of influence.

There is no part of a physician's career of greater importance or one requiring more care than a fulfillment of the duties and obligations toward each other. To be able to forget and forgive the many injustices frequently perpetrated by members of the profession high and low upon their fellows, very often requires not a little sacrifice of one's personal feeling.

The last division of the code treats of the duties of the profession to the public and of the public to the profession and to these I especially desire to draw your attention. Section first declares that physicians shall ever be ready to give counsel to the public in matters pertaining to their profession.

"There is no principle of the code," said the lamented Frothingham, "more neglected than this and none whose neglect has caused greater injury to medical science."

"Until lately the medical profession has not been sufficiently active in exercising the influence it should upon legislative bodies, in the enacting of laws for its own protection; but there is a still greater responsibility in the education of the public in medical subjects. This is the true mission of the doctor, for the name implies it."

"Scientific medicine," again says he, "does not flourish among an ignorant and superstitious people, and we who deplore quackery should remember that ignorance upon medical subjects on the part of the people is the chief cause of its existence. It has been said that people like to be humbugged and such an excuse has been given for the prevalent patronage of quacks. This is a great mistake. People do not like to be humbugged and would not if they only knew the humbugs and how to avoid them. However bright we may paint the future, people like the ways of this wicked world too well to leave it prematurely and they are honest and sincere in their desire for benefit when they apply to a physician.

"Quacks thrive by promulgating error. Would not the truth disseminated pay a dividend as well? What farmer would expect a crop from a field unprepared? Weeds flourish in places where the husbandman most neglects the soil, so with scientific medicine, it can only flourish in fields prepared by proper education, while quackery will flourish where there is most neglect."

"With culpable indifference we have observed other professions, in order to extend their influence, making use of this important element of power. The members of the clerical profession have not trusted to supernatural power to extend the influence of the scriptures. How carefully have they manipulated public opinion to secure recognition of the importance of their own work and prevent the inculcation of anything to lessen their authority and control. From the primary school up through the college course they thus watch and guard the interest of their creeds.

"The politician never trusts to the uneducated public for his majority, but by his public speeches and by control of the press, moulds public opinion to serve his ends. Is it to be wondered at that scientific medicine lacking this essential should suffer in consequence? Public instruction is in all things limited, but just as it is extended in any department of knowledge do we find people discarding error and accepting truth. Medicine is no exception to the rule and if the drudgery of practice will not permit the mass of physicians to become lecturers and teachers, men should be selected for the particular work."

These prophetic words may soon be fulfilled when, by the plan suggested at a Wayne County meeting, through the avenues of the press and by means of legitimate publications, the profession inaugurates a systematic plan for educating the general public in medical subjects. Through the columns of the daily and by means of proper medical articles, a general dissemination of medical truisms will reach the public and counteract the evil influences of the ads from the charlatan and irrepressible quack. Too long has the field been left unguarded to develop the fatal crops of deceit and chicanery which give support to the hordes of brazen rascals who parade themselves before an unsophisticated public in the guise of legitimate practitioners of medicine.

The attitude of the physician before the people is that of a public servant, and it may be fairly stated that the opinion prevails that physicians are obliged by law to answer all cases and render services whenever it is demanded of them. Through the assumption that such services are obligatory upon physicians great injustice is done them. The proposition that professional duty begets menial service contemplates contempt and robs them of the legitimate respect due them from the people.

Physicians should demand reasonable compensation for all services rendered, both public and private. In many foreign countries, free medical treatment is provided at the state's expnese and is liberally paid for, not being gratuitous on the part of physicians. With us, medical charity has become a burden and a reproach to the profession on account of the abuses that are practised to the great injustice of the profession. Justice demands that the unfortunate poor shall be cared for by the state so that the burden shall fall equally on all its citizens. That physicians and surgeons should alone bear the burden of free medical service is unjust. We shall always, as in other vocations, have the never-pay class as a burden, but that thousands who are abundantly able to pay are treated free or with a meager charge is established beyond a doubt by daily observations.

The Detroit capitalist who appeared at a university clinic in the guise of a tramp and successfully acted his part, was given the benefit of a cataract extraction, free of charge. His smile was "large" when he disclosed his identity and explained how easy it was to make money.

A physician from the very beginning of his medical career is encouraged to practice medicine and surgery, not so much for the money he may gather as for humanity's sake, the honor due his profession and the love and devotion of his patients. Unfortunately the majority of medical men depend upon the income derived from their practice to pay the constantly increasing living expenses of to-day for themselves and families, and so they are forced, from necessity, to collect this money from their patients.

The moral and legal responsibilities are the same for the pauper and the millionaire and in many instances the attendance required by the former is the greater. The dreaded suit for malpractice may arise most unexpectedly and the savings of years be required to protect his honor and reputation at the bar of judicial equity when his whole skill and time has been freely given.

We fairly fall over ourselves in our efforts to get these cases at times. An Ingham County M. D. had a suit for ten thousand dollars instituted against him when the fee accepted by him for adjusting a fracture of the hip was twenty-five dollars.

But a bird in the hand is worth two in the bush, so it is all too common a practice to accept that which is proffered rather than the amount to which the physician is justly entitled. No one is more to blame for this than the physician himself as is evidenced by the following:

A few months ago an employee of one of the great railway systems of this state suffered a dislocation of the shoulder. It was reduced by the attending physician from a small town, who administered an anesthetic, made a report to the company of the case, including a diagram of the precise injury and with it his bill for the enormous sum of two dollars.

A physician's interest in the payment of his just claim is as essential as any other feature of his daily life and if he seeks some method to improve the present unfortunate state of affairs he cannot justly be blamed. The requirements of the law that, once accepting a case, the physician is bound to give it proper attention, should awaken him to the necessity of having the requisite foreknowledge that will enable him to distinguish between almsgiving and imposition. And to this end how better than through the County Society is he to obtain this necessary protection. Each member of this society should have in his possession a "blue" book containing the names of the citizens in his community with whom any physician has had knowledge of unsatisfactory dealings. Each one would be glad to impart such information as a protection to his brother, knowing he would in time become the recipient of equally useful knowledge from him. At the same time the test might include the names of many unsuspected citizens whose property is on joint deed or in the wife's name for illegitimate purposes.

It will, of course, be said that a system of this character would smack of commercialism and suggest labor unionism. If true, then let it so remain, for he who waits in his office, these present days, to receive the well earned "honorarium" sips perfume from a faded flower. The County Society need not become a collection agency, but correct knowledge of the physician's duties, obligations and rights under the law can be supplied so that he will be properly protected.

The merciless and unjust actions of Boards of Supervisors who adversely decide the question of the contagiousness of certain diseases dangerous to public health, to avoid payment of legal claims, can be thwarted by concerted action upon the part of the profession.

For the reason that, last year, Dr. ———'s bill for services rendered smallpox cases in the Township of Alaeidon of $150 had been cut to $75, was no excuse for performing a similar act in the treatment of bills returned this year from the Township of Leslie. That legally authorized attendance upon Circuit Courts to give expert testimony should be relegated to the level of ordinary witness fees is a crime against the profession which should be obliterated by the heel of a vigorous protest. The relations of medical witnesses in insane and probate cases should be adjusted by the concerted action of representatives of both the legal and medical fraternities. Courts, indeed, manifest much wisdom when requiring the combined affidavits of two qualified physicians before depriving a citizen of his legal rights by declaring him insane and subjecting him to commitment to an asylum. For assuming this responsibilty which the law so kindly shifts to the doctor's shoulders and which carries with it oftentimes the loss of prestige in whole communities, to remain like a stigma of crime for years, the profession is entitled to the munificent fee of five dollars and a mileage fee of ten cents a mile for each mile travelled. And to whom can we better appeal to rectify these gross impositions

upon the profession than to the committee of legislation of the County Society?

This arraignment of the profession as a very indifferent chemical compound, weak in its own lack of harmony and cohesion, underfed and underpaid, would be intensely lacking were it not for that other virtue, more often portrayed from pulpit and platform, that the high and honorable profession of medicine is even more sacred than the ministry itself.

That this cynical and perhaps pessimistic view is to-day presented here is "not that I loved Cæsar less, but Rome more," and that by reason of it we may bring the necessity of concerted action more forcibly to the individual member.

As times have changed since "We lived under the King," we believe it is only by the united action of the great body of medical men that improved and modern means can be taken to give the conscientious and self-sacrificing physician the reward justly due him, a respectable living and in addition thereto, a sufficiency of this world's goods to protect him from distress and poverty in the helplessness of old age. Indeed, when he reaches the border of the unknown his hands must needs be full of deeds of charity, the golden keys that ope' the palace of Eternity.

KENT COUNTY.

The Kent County Medical Society held its annual meeting Dec. 8th, 1903. The officers elected for the ensuing year are:

Earl Bigham, president; H. W. Catlin, vice-president; S. L. Rozuna, treasurer; Francis J. Lee, secretary. Board of Directors—Wm. Fuller, R. H. Spencer, S. C. Graves and the president and secretary.

During the past year our Society has held twenty-two meetings; twenty-eight scientific papers have been read and fully discussed. Our meetings have been well attended and, last but not least, our one hundred members are all enthusiastic.

FRANCIS J. LEE, Sec'y.

LIVINGSTON COUNTY.

The Livingston County Medical Society met in Howell Dec. 15th, 1903.

After regular routine business an interesting paper was read by Angus McLean, Detroit, on "Surgical Treatment of Gall Stones," illustrating the different surgical conditions and treatment with charts. The paper brought out an interesting discussion.

The Society had for its guest Wm. T. Breakey, of Ann Arbor.

R. H. BAIRD, Sec'y.

MACOMB COUNTY.

ABORTION, ITS PRACTICE.*

A. A. PARISOT, MT. CLEMENS, MICH.

Whether it has been my lot during the first few years of my medical practice to be approached by a woman to relieve her of the contents of a pregnant uterus, or whether my personality led her to believe I was an "easy mark" I do not know, but I do know that such was my experience the first few years after I graduated in medicine, which to-day has prompted me to read a paper before the Macomb Medical Society, entitled "Abortion and its Practice."

First of all let me say that I consider and recognize the fact that the practice of medicine is one of the noblest and grandest sciences to which human talent can attain, providing we live up to its teachings and never violate its principles.

The science of medicine teaches man the art which directly promotes the welfare of human tissue and structure, in other words it guards one's very life; it sustains our failing strength; it preserves the acuteness of our ageing faculties; it supplies those restoratives to life that are conducive to good health from infancy to old age.

From the time of Hippocrates, the father of medicine, to this very day, the physician is looked upon as the most valued benefactor of mankind which he certainly is, and is held in higher esteem and deeper veneration than a member of almost any other profession; he is far superior to the mineralogist who familiarizes himself with metals taken from the very bowels of the earth, or the astronomer who measures distances and weighs the almost inconceivable bulks of the mighty orbs, or the chemist who analyzes the minutest atoms of matter; in fact nearly all other sciences are but minute side issues compared to that benefactor of mankind, viz. : the science of medicine, a science built on a base of solid principles, and so noble and grand in itself that it should be practiced and utilized for noble purposes only, by scrupulous and conscientious physicians who would never stoop to violate its principles, and always bear in mind the fifth commandment, "Thou shalt not kill."

This brings me face to face with my subject, the wilful destruction of a defenseless child in its

*Read before the Macomb County Medical Society, Oct. 29th, 1903.

mother's womb, by mechanical means or otherwise. The wilful act that renders the mother's womb uninhabitable by the existing fœtus, thereby depriving the offspring of its natural and undeniable right to life, the moral and inalienable right which all men are in duty bound to respect, the wilful act which is a direct violation of the first principles of liberty, which declare that all men are born equal and have an equal right to life and existence, and that life cannot be taken unless one's own life is placed in jeopardy by an unjust aggressor or murderous assailant. The interpretation of the law is, reasonable doubt being removed, it is justifiable to resist an unjust assassin, even if the death of our unjust assailant should follow.

With all due respect to the honest conviction of those who oppose me, I frequently have heard several of my colleagues plead that a fœtus is not endowed with life until the expiration of four months, or until after quickening has taken place. What folly! They force me to state that they certainly are several centuries behind the times. By basing my argument on logical grounds which I will substantiate by proof, I maintain that the embryo becomes animated with life the moment conception has taken place, for at once it gradually and steadily gains strength every day, manifesting all the vital phenomena of organic life, secreting its own fluids for its existence and maintenance, and in adult life frequently inheriting characteristics, color and stature of the paternal parent whom the offspring has never seen, or tracing back generations, it may be the exact duplicate of either one of the maternal or paternal ancestors. And this to my mind proves beyond all doubt that life begins at conception. Hence the argument that a fœtus is not a separate and a distinct human being animated with life and entitled to as much respect, consideration and protection as an inoffensive adult because it is not viable, is inconsistent with common sense, good morals and sound philosophy. Therefore I contend that physicians are in duty bound to utilize their skill and influence to protect the unborn as fully as the innocent suckling babe at its mother's breast.

The low estimate that some physicians have placed on the importance of fœtal life has been instrumental in leading the public to believe that life does not exist up to the time, or until its movements are distinctly felt by the mother, which in a great measure has caused wholesale fœticide to be practiced on pregnant women who place no value on the life of their offspring in utero, and have their progeny destroyed with impunity. These are shocking facts but nevertheless, only too true. It is horrible to contemplate that such a state of affairs should exist in a Christian and civilized country like America, where the cloak of protection and liberty is placed around us all, making us all equal, with equal right to live.

It may appeal to some—what is to be done in a case where an organic defect exists? This brings to mind a case of my own. About five years ago I was hurriedly called to attend a case of obstetrics. I found to my surprise a little woman about twenty-six years of age, frail in appearance and not more than four and a half feet in height whose weight did not exceed eighty-five pounds. After carefully preparing my hands I hastily made a digital examination, and found my little patient in the first stage of labor, the os being dilated about the size of an American fifty-cent piece, with head presentation. I returned about two hours later, but was unable to detect any material progress, but found a deformed pelvis. I at once called in consultation my old friend, Dr. Folsom, who frequently aided me in obstetrics before and since that particular time, and we concluded it was best to deliver her as soon as possible. I administered the anesthetic while Dr. Folsom digitally dilated the os sufficiently to apply the forceps, which he was subsequently able to do. We both made traction; the child being very large we were unable to bring it into the world. Being unsuccessful in our attempt we concluded to make a pedalic presentation and deliver feet first. Under the circumstances the delivery was long and tedious, and the child in great danger of death. I was requested by the father to baptize the child while the head was still in utero, which I did. We were unable to resuscitate the little one, but had the satisfaction of giving it sixty-five per cent. of the doubt in its favor that it would live. We told the husband that owing to the existing deformity of his wife that if she again became pregnant her own life as well as that of the child would be placed in jeopardy,—as there is always some danger connected with the Cæsarian section. However, I may add that the operation is not as dangerous as appears on the face of it, and as we are led to believe. A Belgian physician performed the operation seven time on the same woman. In Philadelphia it was performed three times on the same woman. Dr. Bretonnean performed it six times on a woman and that woman his wife.

Returning to the little woman in question I will state that she subsequently became pregnant and gave birth to a child without the aid of a physician or lay person. About three years ago Dr. Folsom and I again delivered her of a pair

of premature twins. A year ago we did the same thing, and expect to deliver her of another pair in the near future, as she is again pregnant. The point I am trying to illustrate is that pregnancy is often more alarming in appearance than in reality. Is it not true that the most of us have been solicited by apparently well-to-do married women not only primapera but women who have gone through parturition many times, who have demanded the lives of their offspring on the grounds that they would be unable to give them care and attention? Have not most of us been told about expense, the pain of parturition and the like, or that the woman is sure she will die in labor? Have we not also been urged by her husband who does not place as much value on the life of his unseen, unloved offspring as he does on his domestic animals in or about his domicile? There may be monetary considerations too, that would swell our bank accounts very materially or she may have an organic defect, or in other words a rachatic pelvis, whereby we base our argument that the mother's life is placed in jeopardy and the child's life must be sacrificed. Can we do it? There can be but one answer. We cannot commit wilful murder by taking one life to save another. If we yield, where will we draw the line and when will it cease? Perhaps you professional brethren may be called to a case equally as deplorable as the previous one. As an illustration you are consulted by a married man who has been unfaithful to his most estimable wife, and who in a moment of lustful passion has seduced a young lady; she becomes pregnant. With this deplorable situation facing both families, will you again yield to satisfy sentiment and society? The only answer is positively, NO.

Taking human life can only be resorted to when an individual is an unjust aggressor, in warfare, or carrying out the penalty inflicted by the state. Some may argue that an embryo that jeopardizes its mother's life, or is a menace to society or family happiness is an unjust aggressor and that the mother has the right to protect her own life by sacrificing the life of her little, unborn babe, that her own may be spared, which to me appears to be a very lame argument. In the first place, can it be proven that the child is an unjust aggressor? It certainly has no intentional guilt. As a learned man of the day says, the mother is fully accountable for the unfortunate situation, the child having absolutely no say as to its existence; why not take the mother's life to save the child's? He also adds, He who wilfully puts a cause must be answerable for the effect of that cause. I maintain the child is not an aggressor because its acts are not directly willed. It has no intentional guilt whatever, and it is placed in the womb without its consent and is absolutely defenseless. Being the child's acts are not willed, no intentional guilt being intended, not being responsible for its acts and existence, and nature protecting and maintaining its life in the only place where it can live, how can any one adjudge it as a murderous criminal with no one to speak a word in its behalf, whose guilt is judged so great that it must forfeit its own life to satisfy an unnatural, whimsical mother or cover guilt in society? Since the child is not responsible for its existence and acts, the plea of self-defense is anything but a sound, logical argument; an argument that must cause the blush of shame to creep over the countenances of conscientious physicians who see the noble principles of the science of medicine violated by unscrupulous men whose vile principles must sooner or later reflect on our noble profession that has withstood the test of time for over two thousand years. When will this degrading work cease? In answer will say, not until the physicians rebel and shun those men who pose as judge, jury and executioner of innocent babes and who measure life by sentiment and dollars and cents, with no moral law to observe or respect. If life is measured by dollars and cents and they prove that a moral law does not exist, I must admit they are right, otherwise I still contend and maintain that I am right.

In order to illustrate my argument we will suppose that no moral law exists. But what about the natural law? Has it no say whatever? If that is the prevailing impression with the lay person and abortionist as well, it is certainly erroneous. If you violate the law of nature it positively will sooner or later hold us accountable for that violation. How many of us have seen a mother for months or even years after she aborted, pine away and die with a malignant trouble which really originated when she violated the law of nature, or a chronic metritis or endometritis develop in her rendering her sterile and unable to beget children, and living in pain and misery until her constitution became undermined to such an extent that she being no longer able to repel the tubercular germs or germs of other diseases equally as fatal, yielded her life to pay the penalty of an outraged law; or have we not seen her taken to the operating room where the surgeon's knife was used as the only means of relieving the hoarded pus in her Fallopian tubes or elsewhere, and frequently forfeiting her life for an unpardonable crime committed against her offspring,

possibly leaving a family of motherless children to mourn her demise. The moral and natural law both claim their just share of respect and are determined that their mandates shall be observed. Those who stop and reflect for a moment will perceive at once we cannot resort to evil means and expect a happy result. We must bear in mind at all times, and bear in mind well, that it is one of the first principles of moral law, that evil can never be directly done and good result from it. Now, if the killing of an innocent babe to save its mother's life is not directly doing an evil that good may result, then I will concede that my position is wrong; but if it is, and I hold that it is, then my position is right and will receive the support of every man who upholds the moral law.

The burning question that is staring the medical profession in the face today is this, how can the practice of abortion be eradicated. I can see three methods, combined into one, and I urge its adoption with all the force I can master and command.

1st. That the physician give the unborn babe more consideration and place a higher value on its life.

2nd. That the physician work hand in hand with the clergy, and that they use their combined efforts and influence to suppress the evil.

3rd. That the physician lend aid to enforce the law and bring the guilty to justice.

If these principles are faithfully adhered to and carried out good results must surely materialize, and the high standard of our noble profession will once more be safely planted where the practice of abortion and charlatanism will crumble and sink in oblivion before it.

MARQUETTE COUNTY.

The second annual meeting of the Society was held in Marquette on Tuesday evening, Dec. 8th, 1903. The following officers were elected: H. W. Sheldon, Negaunee, president; J. G. Bartlett, Ishpeming, vice-president; H. J. Hornbogen, secretary-treasurer; J. H. Andrus, retiring president, to act as one of the directors, J. Hudson's term expiring.

A. W. Hornbogen reported three cases of gangrenous appendicitis. The discussion of this paper was postponed until the next meeting to be held at Ishpeming on the second Tuesday in January.

The Society has a membership of 34 out of a total number of 43 physicians in Marquette and Alger counties. By permission of the councilor, Dr. Moll, of Houghton county, and Dr. McHugh, of Ontonagon county, were made members of this Society.

H. J. Hornbogen, Sec'y.

MONTCALM COUNTY.

The Montcalm County Medical Society will hold its first quarterly meeting of 1904 at Edmore, January 7th.

PROGRAM.

Call to order.

Reading of the minutes.

Reception of members and general business.

Clinic.

Paper—Differential Diagnosis of Typhoid Fever; F. R. Blanchard. Discussion—Geo. L. Bond.

Syphilis (a symposium)—Etiology and Diagnosis, L. S. Griswold; Pathology of, A. P. Culbertson; Prognosis and Treatment, N. E. Bachman.

Paper—Carcinoma of the Breast, Richard R. Smith, Grand Rapids. Discussion—General.

Paper—Cystitis, S. M. Gleason. Discussion—J. W. Kirtland.

Paper—Neuralgia, J. T. Joslin; Discussion—Josiah Black.

Surgical Cases, A. W. Nichols. Discussion—General.

Remarks by W. T. Dodge, Councillor Eleventh District.

H. L. Bower, Secretary.

TUSCOLA CO.

The annual meeting of the Tuscola County Medical Society will be held in I. O. F. Hall at Vassar, Mich., Jan. 11th, 1904, at 2:00 P. M.

PROGRAM.

Business meeting.

Report of Officers and Delegates.

Address of President, A. L. Seeley.

Address of Councilor, S. I. Small.

Election of Officers.

PAPERS.

"The Physician's Duty to Pregnant Women"—Geo. Bates.

"The Conduct of Normal Labor"—A. J. Howell.

"The Care of Puerperal Women"—C. W. Clark.

Mrs. F. D. LeValley will entertain the doctor's wives in the afternoon.

NOTICE.—Annual dues must be paid by all at, or before, this meeting.

W. C. GARVIN, Sec'y.

WASHTENAW COUNTY.

THE PROPHYLAXIS OF VENEREAL DISEASES.*

JAMES F. BREAKEY, ANN ARBOR.

At the last meeting of the Michigan State Medical Society a committee of three was appointed to secure data regarding the prevalence of venereal diseases in Michigan, with such other information as might be of value in limiting the spread of such diseases.

In order to make a beginning in this work the committee inserted a blank report in the August number of The State Journal, requesting members to fill out the same. They also asked the secretary of each county society to secure a paper bearing on this subject for presentation at the first county meeting in the fall. This latter request is made with the hope that general interest in the subject may be stimulated sufficiently to secure to the committee material co-operation on the part of the profession at large.

As an example of the present active interest taken in these matters by physicians and the degree to which voluntary reports are made, I may say that to my knowledge but one such report as was requested has been received from the membership of this society. It is true that voluntary reports upon any subject are difficult to secure. In the consideration of the venereal diseases this is especially so. It would almost seem that many practitioners attach a stigma, not only to the unfortunate victim of venereal infection, but to his physician also. Yet few of these men refuse to treat these cases when presented, and all practitioners, regardless of their special line of work, must frequently recognize and combat the various complications and sequelæ of the venereal diseases.

While public sentiment will always condemn those with venereal infections, and may even look slightly askance at the specialist in genito-urinary and venereal diseases; it remains for those medically educated to assist all unfortunates, and to recognize all honest physicians and meet them on an even footing. With such recognition and co-operation we will be ready to begin a crusade against the further spread of these diseases.

There is an apparent scale in the degree of disgrace attaching to those tainted, depending upon the character of their infection.

It seems most difficult to impress the laity with the fact that it takes but one exposure to infect with syphilis, and that therefore anyone who has ever transgressed the moral code is equally guilty with the syphilitic. In fact, it not infrequently happens that an innocent boy at his first indiscretion will become so infected.

Such an infection is ordinarily supposed to be the most dreaded of these diseases. Urethritis, however, in itself and its sequelæ, should be feared almost equally. With its various posterior involvements, the possibilities of stricture, epididymitis, orchitis, cystitis, arthritic and other constitutional manifestations, it is quite too serious to be passed over lightly, and frequently in point of time quite outlives a syphilitic infection.

Statistics in regard to the prevalence of venereal diseases are most untrustworthy and vary greatly with different compilers. Lawson Tait claimed that every man at least once in his lifetime had gonorrhœa. While we all know such a statement to be quite untrue, the fact nevertheless remains that venereal exposures, if not infections, occur in a very large percentage of males. It would seem that 75 per cent. were a conservative estimate. Here then is a condition for the physician and moralist to meet.

The desideratum is, first, to diminish the *number* of exposures and second to diminish the *danger* of exposures. These are matters that have been occupying the minds of many for years, and various efforts have been made to that end. The dangers can unquestionably be so greatly diminished as to make infection practically impossible, providing instructions are carried out in detail. But even if such precautions could be enforced (which unfortunately cannot be done) the moral question arises as to the propriety of such efforts, and they certainly do not accomplish the greatest good. Our first effort should be toward restricting immorality and it is by this alone that any local good can be accomplished. Innocent infections are not considered in this connection at present.

In addition to an educational and moral crusade among the laity greater effort should be made in our medical schools toward impressing medical students with the frequency and seriousness of all forms of venereal infections. Some country physicians, because they do not frequently see such seem to think that their patients are practically immune. That they fail to see a large per cent. of the acute cases is undoubtedly true and due to the fact that occupying positions as family

*Read at regular meeting Oct. 14th, 1903.

physicians and intimate acquaintances, patients hesitate to go to them for such troubles and go elsewhere for advice or seek aid from the advertising quack. Many such physicians tell us that they do not see one case of syphilis in a year, and yet these men have large general practices. Knowing the prevalence of this disease we can only conclude that many a mistaken diagnosis is made and many a syphilitic in a condition promising improvement or recovery, fails of such treatment as should protect him against tertiary manifestations. Or one unmarried is allowed to marry, thereby infecting a healthy bride and begetting a weakly, tainted progeny.

The accompanying symptoms of urethritis are usually so clear that one could hardly be excused for overlooking a diagnosis, but with syphilis the symptoms are so manifold, perplexing and sometimes so slight that in any stage one is excusable for hesitating to make a positive diagnosis. And yet this must be done. The cases must be watched, studied and proved. Not only is this necessary for the good of the patient, but equally if not more important, for the protection of the public at large.

While we would improve the morals of our youths and lessen the dangers of infection, we must be prepared when they do occur, not only to recognize, but to treat them thoroughly and scientifically. By just such thorough treatment will we limit the further spread of disease through our individual cases. And not only must the cases be thoroughly treated but they must be watched to an absolute recovery. In gonorrhœal urethritis repeated negative examinations should be made before a patient is discharged and the patients should be emphatically warned against marriage without a final preliminary examination. With syphilitics our judgment will be severely taxed in advising our patients as to their eligibility to marry. Another and greater difficulty arises in determining how to handle unruly patients. What shall we do with the man who, regardless of our most emphatic warnings, perisists in careless habits in his daily associations? He is a constant menace to all with whom he comes in contact, and regardless of our anxiety, we are bound by our professional oaths to utter absolutely no word of warning. If this same man announces his intention to marry, despite our most vigorous protestations, what remains for us to do?

Undoubtedly effort must be made to improve the moral health of the country. The standards of morality vary in different communities. Unfortunately the general tendency is not toward improvement. Existing conditions are nowhere favorable. In the so-called "smart set," virtue and morality are held but cheaply. The best conditions are found in the middle classes, where the life is not so strenuous and the fight for existence is not so bitter. Among the poorer classes, shop-girls, waitresses, stenographers and general help the pay is much too small. This female help is largely paid on a basis similar to that given to car porters who make the greater part of their income through tips. So with these girls, their positions serve only as opportunities to secure to themselves men who practically support them. Girls working for two to seven dollars a week, and living at home, cannot afford to wear such clothes as ordinary clerks are expected to wear; nor can stenographers and office girls afford such displays of jewels as we so frequently see on the small incomes secured to them by their positions. An undoubted improvement in morality and a proportionate diminution in the number of venereal diseases will be secured when employers are forced to pay living wages to their help.

In the *Philistine* for August occurs the statement that "Morality is largely a matter of geography. As Hancock said of the tariff: 'It is a local issue.'" And as it is a local issue, so, too, must the remedies to overcome immorality be adapted to the varying conditions of locality. So long as man exists, so long will immorality continue. Ideal conditions cannot be obtained. Clandestine prostitution will always exist. We must satisfy ourselves with small beginnings. To combat an evil it must first be recognized; and it is in our hesitation to make any recognition of the prostitute that one difficulty lies.

In the large municipalities the methods adopted need to be quite different from those suitable to the smaller communities. In Japan the prostitutes are segregated in certain quarters, entrance to which are guarded by policemen who warn all comers regarding the character of the place they are entering. Drunken men are not allowed to enter and liquors are not sold within. In addition, printed instructions are given as to precautions to be observed in attempting to prevent infections. Such a plan in our larger cities would seem worthy of a trial. Many young men, and women, too, have lost their virtue by reason of intoxication, who, when sober, would not have yielded to such temptations. In the towns and villages a licensed prostitute would not be tolerated and we must turn our efforts along different lines.

We in Ann Arbor should be most interested in local conditions and their betterment. With a

population of probably over 5,000 young men, transient and local, all in the formative period, some effort should be made to protect them. This is particularly an educational center. Boys and young men are sent here from all over the country. Of these it is safe to say that 75 per cent., if not more, are innocent when they leave home. It is also safe to say that 50 per cent., or more, of these have lost their innocence before the termination of a four years' course at Ann Arbor.

What effort does the family, the university, the town or the medical profession make to protect these boys? Practically none! Most families trust their boys, thinking them better, stronger and less human than other boys. No one talks to them, warns them or shows them the way. The university makes no endeavor along this line. It would seem that something could be accomplished here. Is it a wise policy to shut our eyes to existing conditions? They are matters of delicacy and require the exercise of some tact, but they are not impossible. Should not educational lectures be given to the male students throughout the year? Particularly early in the year. The purist and sentimentalist would object to lectures upon how to *diminish* the dangers of exposures. It is not the province of a school to teach its pupils how to *avoid* the evils or results of transgressions; but it could and should teach them to *fear* those results. We must not look too closely at the means by which we attain the end. If the satisfaction of, and desire for clean living in itself will not keep one straight, sometimes the fear of results of transgressions may so stimulate their weakened morals as to steer them aright. If every young man could be convinced that he may ruin his life by only one night's folly, he might be made to hesitate.

They should be taught that disease cannot be recognized and that all immoral women are more than likely to be diseased. Many people believe that syphilitics have the evidence of their disease stamped plainly upon them, and many more believe syphilis a very rare disease, while we all know that there is no more inconspicuous lesion than the primary sclerosis of syphilis, frequently almost impossible of demonstration on the female. As regards the local frequency of syphilis, it is surprising even to the medical man. While it is true that gonorrhœa is sometimes a self-limiting disease and usually easily cured, and also true that we believe syphilis to be ordinarily curable, the fact remains, that the sequelæ of gonorrhœa frequently present themselves years after, not only in the patient but in his wife and even in his offspring; and the syphilitic may die an early death in an asylum, while the heritage of his disease will be transmitted even unto the third generation.

A few such facts as these clearly and simply explained would surely have a deterring effect upon many.

An extract from an editorial in a recent daily paper, inspired by Sothern's play in Detroit, indicates somewhat the moral trend: "Dramatic expression of immorality is what the 'cultured audience' is after, and it must be expressed in the most explicit terms. There was a time when a vague suggestion of the indelicate situation was quite enough to satisfy this craving. Repeated indulgence, however, has served only to make more ravenous this appetite of the 'cultured audience' for what in Paris is called the 'risque,' and in Iowa the 'indecent.' Today the 'cultured audience' must have 'atmosphere,' the suggestive conversation, the completed illusion. The stage air must reek with the fumes of cigarettes and wine and insiduous perfume. There must be left no relic of propriety to mar this absorbing picture of complete moral abandon."

Is this all indicative of higher education, more liberal tolerance, purer thought, blinding us to the suggestive, in the greater realism; or does it indicate a decadent moral sense, which needs go but a step further to allow us to look with equal composure and complaisance upon the same dramatic acts in private life and to receive the actors equally readily on social footings?

Is it not true that the great sin is in being found out? The *Philistine* says that: "Over one-half the support of prostitutes everywhere comes from married men." Can this be true without a certain tolerance on the part of society? Are people absolutely blind to these conditions? The court and legal exposures are not necessary in all cases. Public sentiment should be so strong that questionable conduct would ostracise a man; instead of which it frequently serves to popularize him. Many a man is welcomed into good society who is known to consort with questionable women. This may be a phase of the question which should not belong solely to the medical man. Such conditions nevertheless must be recognized and improved upon. Moral improvement will go further in limiting the spread of venereal diseases than an education in antiseptics.

The warfare against the spread of the venereal diseases must begin several steps back. The upbringing, the early education, the environment, the atmosphere in which our boys live can so start them and guide them that they should voluntarily at all times shun immorality, and so avoid infections.

WAYNE COUNTY.

Meeting of the Surgical Section, November 2, 1903.

F. B. Walker read a paper, entitled "The Treatment of External Operation Wounds," which was discussed by Drs. Tibbals, Davis, Yates, Schenck, Sanderson, Meddaugh, Hirchman and Hitchcock. The paper contained so many points of general technic that an abstract is impossible. The synopsis is as follows: Closure of wound. Elimination of wound discharges. Protective dressing. Suture materials, and their application. Drainage and its usages. Relative values of the various wound dressings.

Meeting of the Section on Internal Medicine and Pathology, Nov. 9, 1903.

G. L. Connor presented a paper, entitled "Pathological Fragments." Immunity was defined and the nature, mode of action, and the specificity for cells and species of the antibodies discussed. Some of the results of the work lately done on antitoxins and cytolysins were reviewed. The writer then took up the subjects of thrombosis and hemorrhage, in the light of this recent work. The so-called "horror intoxicus" and autolysins were touched upon and the treatment and prevention of snake poisoning by the use of prepared snake blood discussed.

The discussion was opened by **P. M. Hickey.**

Meeting of the section on Gynecology and Obstetrics, Nov. 16, 1903.

W. M. Metcalf reported "Some Interesting Cases in Abdominal and Pelvic Surgery." Since the report made at the state meeting in June, Dr. Metcalf has had three cases of extra uterine pregnancy, all treated by abdominal section, and all making excellent recoveries. Attention was called to one symptom which all of these cases presented, and is quite common in this condition, i.e., pain in the neck and shoulders. The specimen from the second case showed the gestation sac attached to the fimbriated end of the tube by a well marked pedicle, a condition difficult to explain. The diagnosis of the third case between appendicitis and tubal pregnancy was most difficult, the operation showing that both were present.

Case 4. Woman, aged 80, had an extensive carcinoma of the external meatus, involving the labia minora. Three-fourths of the urethra, the clitoris, and the labia minora were removed. The questions which arise are: (1) In case of recurrence, should a more extensive operation be done, and (2) will the development be rapid or slow in a patient of this age?

Case 5. Specimen showing a small fibroid in the posterior uterine wall, and a polyp of the mucosa, removed from a patient, aged 42, who had suffered from excessive flow, and agonizing pain during the first few hours of the period.

Case 6. A multipara, of 42 years. Had suffered for 18 years with diarrhœa and hysteria. The uterus was bound down and adherent. After an hysterectomy, the bowel condition was entirely well and the nervous symptoms much better.

Case 7. A specimen of enlarged prostate, removed by suprapubic prostatectomy, from a man, who had suffered from paradoxical incontinence.

Case 8. The kidney and ureter removed in one piece, by extraperitoneal nephro-ureterectomy, from a man, aged 47, who had suffered since his fourth year, with attacks of kidney colic. A stone was found in the ureter, near the bladder.

J. H. Carstens exhibited a myoma, removed from a four months' pregnant uterus. The patient aborted on the ninth day. A second myoma was that removed from a woman, who had had a double oöphorectomy and fixation of the uterus, elsewhere, one year previously. An appendectomy, cholecystostomy, and closure of a large ventral hernia were done at the same time.

A general discussion followed.

General meeting, November 5, 1903.

C. D. Aaron presented a paper on "The Treatment of 442 Cases of Movable Kidney without Surgical Intervention." Dr. Aaron referred to the terms applied to the condition of nephroptosis, and said that surgical intervention should be reserved for the true "surgical kidney." When a proper mechanical support fails to hold the kidney in place, then and then only should operation be advised. The operation has a mortality of from 2 to 5%. Many operations have to be done a second time, because the kidney is not properly anchored, and the gastrointestinal symptoms are not relieved.

The views of Israel, Madsen, and Iapovski were cited. From the author's experience of 442 cases, he believes that 90% can be relieved without operation. Of this number, 329 were females, and 121 males. The ages ranged from 8 to 70 years. The right kidney was movable in 194 cases, the left in 20, and both in 228. Only two gave Dietl's crises, and these were referred to the surgeon for operation. Two hundred and fifteen cases have made an absolute recovery, 168 have improved, and 59 have not improved or have been lost sight of.

Dr. Aaron then spoke of a form of nervous dyspepsia depending on nephroptosis, many of which are treated for indigestion, hysteria, neurasthenia, uterine and ovarian disease, liver trouble, anæmia, and many other diseases. Movable kidney is responsible for constipation, backache, debility, acne, headache, nervous exhaustion, and a long list of other symptoms.

The main treatment of movable kidney is to support the kidney and along with this, such other abdominal organs as are displaced. This is accomplished by specially constructed bands, which must be carefully fitted to each patient. This the author does by making a pattern, using for the purpose a flexible lead tape. The pads must be so arranged that they will support the kidney. It has been found that 90 to 95% of the cases can be cured by a properly fitting band. As a usual thing this should be worn for one year. Besides supporting the kidney, diet, tonics, massage, and electricity play an important rôle. The histories of a number of cases were then given, and charts, showing general enteroptosis, exhibited.

B. R. Schenck gave a paper on "The Results of 48 Kidney Fixations." The great differences of opinion as to the proper treatment of nephroptosis and the difficulty of deciding between them were spoken of and the importance of reporting cases, treated by different methods, emphasized. The relatively fixed position of the kidney is produced by a combination of several different factors, the principal of which are: (1) The peritoneal folds; (2) the subperitoneal connective tissue; (3) the adipose capsule and fat; (4) the vessels; (5) the connections with the adrenal; (6) intra-abdominal pressure; and (7) the configuration of the posterior abdominal wall. A short review of the work of Wolkow and Delitzen on the para-vertebral niches, and Becker and Lemkoff's views of the relation between movable kidney and certain body types, was then given.

The forces tending to displace the kidney are: (1) contractions of the diaphragm; (2) influence of liver and spleen; (3) pregnancy; (4) disappearance of the fat; and (5) traumatism. The oft repeated slight traumata are the most potent. For any or a combination of any of these factors to be effective, the author believes that a certain anatomical condition must be present.

Although nephropexy was first done by the late Professor Hahn of Berlin, the development of the operation has been principally here in America. There are several excellent operations, but the simplest method is that practiced by Kelly. The kidney is exposed through the superior lumbar trigonum of Henle, and 2, or sometimes 3 triangular silk sutures inserted as advised by Broedel, so as to hold the posterior surface of the kidney to the quadratus lumborum muscle. Great care must be taken to observe the relations of the kidney, and not to include the first lumbar nerve in the sutures. (Note—This manner of placing the sutures is practically the same as that devised independently by Goelet of New York. See *American Medicine*, vol. iv., p. 176, Aug. 2, 1902.)

A table of the results of 48 operations, done at the Johns Hopkins Hospital, by this method, was shown. None of the cases done during the last eighteen months were included in the report, the author believing that the results can be judged only after that length of time. Cases of general enteroptosis should not be treated by operation. It is especially indicated in the class of cases giving symptoms referable to the kidney itself, of these there were 25 cases, 18 absolutely well, four improved, and three unimproved. The four cases improved are all much better, but have slight discomfort, following, in three cases, subsequent pregnancy. Of the three unimproved, two were cases of entroptosis and should not have been operated upon, while one was an absolute failure.

Of the eight cases giving gastric symptoms, three are perfectly well, three much improved, and two unimproved.

Fifteen cases gave nervous symptoms, and of these seven are well, five improved, and three unimproved.

T. A. McGraw, in opening the discussion, said that the tendency is probably to operate too much. He referred to the physiologic mobility of the kidneys and said that the operation should be reserved for the cases where the symptoms were referable to the kidney itself, or where marked nervous symptoms are present. Belts, at the best, are very uncomfortable, and when tight enough to affect the kidney cannot be worn. Scar tissue

after an extensive operation, as in splitting the capsule, is apt to cause trouble.

Angus McLean spoke of the large number of double nephroptoses in Dr. Aaron's list, of physiologic mobility, and the difficulty of making a diagnosis of pathologic mobility.

J. A. Attridge disputed the high mortality, as given by Dr. Aaron, and deprecated the use of the belt. The operation which he had found satisfactory in one case was that of Edebohls.

L. J. Hirschman thought that one reason the patients treated with the belts say that they are better, is on account of the feeling of support and wellbeing, given by the bandage. He considers the treatment to be irrational.

W. P. Manton referred to the degrees of mobility and gave his preference as that of the Edebohls operation of splitting the capsule.

A. N. Collins spoke of the impossibility of fixing a loose round body in the abdomen by any form of bandage.

F. W. Robbins said that though the Edebohls operation may give a firmer support, it is a more difficult operation and one of greater mortality. He had seen the simpler operation, as done by Kelly, and believes that it has no mortality, other than that of the anesthetic.

Meeting Nov. 12, 1903.

W. M. Donald's paper was entitled "Cause and Treatment of Morphine Inebriety." Considering that there are at least 100,000 victims of the morphine habit in the United States, the importance of the subject is evident. It has been stated by Kipling and others that the use of opium, in its varous forms, is as common among the Orientals as that of tobacco and alcohol among Occidentals, yet the reason that the effect is less upon these peoples is not evident.

The chief etiological factors in the production of the morphine habit are: (1) Pain, mental or physical, real or fancied, and (2) insomnia. Physicians are responsible for a large part of the inebriety. Of Dr. Donald's last four cases, two were physicians and one the wife of a physician. The rule should be for the doctor to dispense the drug and not write prescriptions, which may be repeated over and over again. Physicians are not to blame in the cases who acquire the habit on account of insomnia. The idle rich take opium to relieve ennui. We should teach the laity the terrible effects of the habit.

Although many cases are treated, the actual cures are few. Our best efforts should be directed toward the prevention of the habit. The methods of treatment are four—(1) Sudden withdrawal; (2) fractional reduction, over four to six weeks; (3) substitution method, making use of chloral, hyosin, etc.; (4) gradual withdrawal, over 7 to 10 days. The first method is cruel and unsafe, the second is too tedious, and the third has little advantage. The author treats his cases as follows: Send patient to a hospital, remove all the clothes and search them and the patient very carefully. Ascertain as soon as possible the minimum amount necessary to keep the patient comfortable, and begin on this. This will usually be about one-half the amount which the patient says he is taking. This amount is now cut down from one-eighth to one grain a day until none is given. Hot baths, massage, and sometimes lavage are employed. Nux vomica is given. Forced feeding is a very necessary part of the treatment. The patient should be kept in bed at least two weeks and the treatment should be continued for six weeks, or better eight. If possible, a special nurse should be in attendance.

Dr. Flinterman, in opening the discussion, said that he did not consider eight weeks long enough to complete a cure; that often a year is necessary. Often physicians are to blame for the habit, as they prescribe opium for the pain in diseases where there are repeated attacks of pain, as in locomotor ataxia, gall stones, etc The forensic question of the responsibility of the morphine habitue, is an important one. Morphinism the speaker defined as the craving for the drug by the organism, caused by chemical changes in the central nervous system.

Dr. Hitchcock spoke of the importance of not trusting these patients, and outlined his method of substituting other substances, often inert, in the capsules, during the treatment.

Dr. Clark believes that the drug stores are more to blame for the prevalence of the habit than are the physicians. The great factor in the treatment is the upbuilding and training of the morale of the patient.

Dr. Duffield referred to the use of ergot as a substitution drug.

Drs. Chittick, H. Wright and **Carrier** also spoke.

In closing, **Dr. Donald** said that patients can be committed for this habit, and absolute control thus obtained.

The president, **Dr. Jennings,** spoke of the movement in the city to establish a Walker-Gordon laboratory.

The meeting of November 18 was given up to a social evening, a symposium on "Automobilious Fever" being held, after which refreshments were served.

PUBLICATION COMMITTEE.

REPORT OF LECTURER 3RD DISTRICT.

BATTLE CREEK, December 8, 1903.

EDITOR—Although not in my district, I was called upon by Dr. W. H. Haughey, Councillor of the 3rd District, to fill an engagement for him with the Barry County Medical Society, which held its annual meeting and election of officers in Hastings, Thursday, December 3rd. Dr. Haughey, so prominent in all society work, has been called by some outside interests to visit Cuba, where he will be for the next month or two, and for that reason was unable to keep this engagement.

Your lecturer received a most hearty welcome and had a most delightful experience with the different members. The annual election passed off nicely, while perfect harmony seemed to prevail. The scientific papers presented before the society were of rare merit and brought forth very able and pertinent discussion. Dr. Schuyler Colfax Graves, of Grand Rapids, read a paper entitled "The Operative Incision," which appealed very forcibly to the physicians assembled, particularly those of surgical tendencies. Dr. J. J. Mercen, of Holland, read a paper entitled "Retro Displacements of the Uterus," which showed that he is not only a painstaking and careful physician, but an expert surgeon, and has well employed the few years of his medical practice. Dr. J. H. Reed, of Battle Creek, read a paper on the "Presence of Acetone and Diacetic Acid in Diabetes Mellitus," which brought forth some very kind and pleasant comments.

Several new members were elected and the meeting adjourned after having elected a new corps of officers for the ensuing year, and as these will appear in the report of the secretary of the society, I will not infringe upon his right. Your lecturer wishes to acknowledge the cordial welcome and kindly greetings extended to him on this his first visit to the Barry County Medical Society. Unity and prosperity seemed to be the watch-word.

For the first time in the history of my lecturship I report the proceedings of my own society, the Calhoun County Medical Society, Branch No. 1, which held its annual meeting, and election of officers followed by a grand banquet at the Battle Creek Sanitarium. The retiring president read a magnificent paper upon the subject of "Catholicity in the Practice of Medicine." Dr. F. W. Robbins, of Detroit, contributed a valuable paper entitled "Hemorrhage from the Bladder," while Dr. Angus MacLean, of Detroit, presented a very valuable surgical paper entitled "Congenital Dislocation of the Hip." He exemplified his mode and manner of procedure from two standpoints, surgical and bloodless, in which latter he referred to Prof. Lorenz and clearly demonstrated the fact that Prof. Lorenz was not the author of "bloodless operations." Dr. J. H. Reed, of Battle Creek, presented "A Contribution to the Chemistry of Diabetes Mellitus, with Special Reference to Coma and its Treatment." While perfect harmony did not altogether prevail, the meeting was a grand success, and the report of the Sec.-Treasurer showed prosperity in all branches of the society.

The following officers were elected for the ensuing year: President, Dr. J. C. Brown; Vice-President, Dr. A. J. Abbott; Sec.-Treas., Dr. W. H. Haughey, while Dr. Louis S. Joy, the retiring president, entered the board of directors, Dr. C. J. Vary retiring, his term having expired. The banquet at the Battle Creek Sanitarium was magnificent in all its details, about one hundred and fifty members and their ladies being present. Dr. Geo. C. Hafford, of Albion, ably filled the position of toastmaster, while suitable responses to assigned toasts were made by Drs. Breakey, Bulson, Biddle, Joy, Brown, Kellogg and others in which my memory fails me.

I should not close this report, however, without giving due mention to the address of Mr. Joseph L. Hooper, Pros. Attorney of Calhoun County, who made a telling speech which was received with vociferous rounds of applause. The society is to be congratulated upon the work of its committee on annual meetings who so carefully planned this magnificent banquet for the social and pleasant intercourse of the members of the society. At the conclusion of the festivities the society adjourned to meet in Albion the first Tuesday in March, 1904.

Respectfully yours, JAMES H. REED,
Lecturer of the Third District.

The Council of the Indiana State Medical Society advised that no delegate be appointed to the so-called American Congress on Tuberculosis at St. Louis in 1904, organized by Clark Bell of New York, because it does not regard the proposed Congress representative either of the medical profession or the best scientific thought of the country. This action it has given to the Medical Press and Hon. John Hay, Secretary of State at Washington, who has been asked to lend official aid to the movement. What state votes next?

Important Relations Which Exist Between Typhoid Fever and Tuberculosis.

1. These diseases may be concurrent.

2. Enteric fever may be mistaken for tuberculosis. This is rare.

3. Very much more frequently tuberculosis is taken for typhoid fever. There are five types of tuberculous infection which may simulate typhoid:

(a) Acute miliary form.
(b) Tuberculous meningitis.
(c) Tuberculous peritonitis.
(d) Acute toxemia of certain local lesions.
(e) Forms of pulmonary infection.

Dr. Osler calls especial attention to the last two.

4. In rare cases pulmonary consumption follows typhoid fever (*American Medicine*, Dec. 26, 1903, by William Osler, M. D.)

Poisoning with Asperin.—A patient, 29 years old, took nine grains of asperin. Within fifteen minutes, he developed symptoms of salicylic acid poisoning. By means of stimulants, the patient recovered in five hour. Dr. Borri states that the molecule of asperin is not as stable as has been claimed. As the amount of salicylic acid in this drug is small, it is probable that there is a peculiar union between this acid and acetic, thus rendering its effect toxic.—*Gazzetta Degli Ospedali* E. De Le C. Iniche., September 13, 1903, by Andrea Borri.)

Causes of the Occasional Failure of the Operation to Cure Gall Stone Disease.

1. Incomplete removal of stones.

(a) Stones in the cystic duct may escape the notice of the surgeon because of the depth of the parts affected and the obesity of the patient. Robson's technic has made it easier for the operator to expose these parts.

(b) A stone may be present in the common duct in cases operated on for gall stone of cystic duct. As the former stone gave no symptoms it may escape the operator's notice.

2. Secondary obstruction of the cystic duct, preventing free drainage down through the passages.

3. Chronic pancreatitis—Here drainage must be long continued to obtain good results.

4. Cancer of gall-bladder may be mistaken for inflammatory disease or it may appear after the gall stone operation.

5. Post-operative adhesions, especially those to the stomach and duodenum.

6. Hernia, following operation for gall-stone disease.—(*Journal of the American Medical Association*, Dec. 26, 1903, by W. J. Mayo, M. D.)

Circulation of Cerebro-Spinal Fluid.—Cathelin states that cerebral spinal fluid circulates in a manner similar to the lymph. It comes from the blood and returns to it through the lymph circulation. He gives diagrams illustrating it. (*Presse Medicale*, Nov. 14, 1903, by F. Cathelin.)

A Device for Premature Baldness.—Observing cases of alopecia, especially of the premature variety, one is impressed by the prevalence of this trouble under certain conditions and its absence in others, as in the senile variety, where one might expect it. The savage and half-civilized people are afflicted but rarely with alopecia. Baldness is much more frequent in men than in women. Dr. Gilbert concludes that it is often due first to the tight hat band and second to the impervious material from which the hat is made. The former cuts off the free circulation of the blood from the scalp and leads to atrophy of the hair bulbs. The latter, because of the lack of ventilation, keeps the head, after a free perspiration, in a constant state of moisture and sogginess, thus acting as a continuous poultice.

The effect of this kind of headgear is more marked because of the superficiality of the temporal vessels.

As a remedy for premature baldness, he suggests the insertion of cork blocks at certain points in the hat band in juxtaposition to the head. (Of course, the use of these will necessitate the patient buying a hat slightly larger than he has been wearing). These blocks should be so placed as not to impinge on the larger arteries. The use of this device gives the scalp more air and there is less pressure on its blood supply.—(*New York Medical Journal*, Dec. 26, 1903, by John Gilbert, M. D.).

The Prompt Collection of Fees.—One of the first things I made up my mind to attend to after I entered the practice of medicine was to try to collect my bills. This I have been fairly successful in doing. I follow out this plan. My bills are sent out the first of the month. I invariably do this for the following reasons:

1. If there is any misunderstanding as to the amount, it is fresh in our memories, and we can straighten it out with satisfaction and dignity to all concerned.

2. I know where my patient lives.

3. Patients pay quicker, because they have not had time to lose all the gratitude that was born in them while they were sick.

If I know a patient is a deadbeat, then I respond to the call upon one condition, and that is the money is to be paid in advance or I tell them it is their privilege to seek any of my neighbors. —(*Lancet and Clinic*, by M. A. Tate, M. D.).

CHANGE IN MEMBERSHIP.

Nov. 15th to Dec. 15th.

NEW MEMBERS.

D. G. Cook—Battle Creek.
M. V. Dryden—Battle Creek.
J. M. Greene—Lansing.
J. E. Heald—Battle Creek.
C. J. Hobbs—Battle Creek.
W. N. Kenzie—Battle Creek.
A. S. Kimball—Battle Creek.
B. E. Manchester—Crystal Falls.
M. B. Martin—Battle Creek.
O. A. Tooker—Lansing.
F. N. Turner—Weberville.
W. H. Veenboer—Norway, Mich.
J. A. Vernier—Battle Creek.
J. A. White—Battle Creek.

CHANGE OF ADDRESS.

W. G. Rice—665 2nd Ave., Detroit.

DEAD.

J. Cahalan—Wyandotte.

MORTALITY OF MICHIGAN DURING NOVEMBER, 1903.

There were 2,623 deaths reported to the Secretary of State for the month of November, or 1 death less than the number for the preceding month. The death rate was 12.9 per 1,000 population.

By ages, there were 412 deaths of infants under 1 year; 171 deaths of children aged 1 to 4 years inclusive, and 789 deaths of elderly persons over 65 years of age.

Important causes of death were as follows: Pulmonary tuberculosis, 158; other forms of tuberculosis, 27; typhoid fever, 80; diphtheria and croup, 112; scarlet fever, 14; measles, 7; whooping cough, 28; pneumonia, 206; cancer, 140; accidents and violence, 194.

The number of deaths reported from typhoid fever was less than during October. Tuberculosis also showed a decrease, while diphtheria, scarlet fever and other diseases of children showed a considerable increase.

There were no deaths from smallpox during the month. One death from chickenpox was reported from Ashland township, Newaygo county.

Book Notices.

TUTTLE'S "TREATISE ON THE ANUS, RECTUM AND PELVIC COLON." A Treatise on Diseases of the Anus, Rectum and Pelvic Colon. By James P. Tuttle, A. M., M. D. With eight colored plates and three hundred and thirty-eight illustrations in the text. New York and London: D. Appleton & Company. 1893. Cloth, pp. 961.

Not the least important field in surgery is the rectum. Until comparatively recent years it was mainly in the hands of traveling "specialists" otherwise known as quacks. Each of the latter had the power of doing some good in some cases, but was especially strong in the ability of "manipulating" the dear public. An occasional surgeon of repute, as the late Willard Parker of New York, recognized the splendid possibilities of rectal surgery, did some himself and stimulated his students to do more. Doubtless the meager attention given rectal disorders in undergraduate medical schools has given greater prominence to that done by the rectal clinics of the post-graduate schools. Dr. Tuttle for more than a decade has conducted a very large clinic of this sort, and so has been able to test the views of previous workers, and formulate such procedures as his actual observations warranted. This shows that different methods are best for different cases, as expert clinicians have found in other fields of medicine; hence a practitioner should become familiar with all known methods, so being armed for every peculiarity of different cases. This method has led the author to give not only his own practices and opinions but those of other workers in the same field, but the latter are fully digested and stated in their fitting place.

To examine properly, correctly determine the nature of a case, give a rational prognosis, and institute local treatment, operative or non-operative are the foundations of successful practice and are fully dealt with by the author. Very many cases are thus readily restored to health, ere organic disease necessitates operative procedures; others call for radical operations. To recognize the limitations of non-operative, and the necessity for operative treatment is a high art and Dr. Tuttle has made this possible for such practitioners as will master this book. Three hundred and thirty-nine illustrations largely original, and many full-paged colored plates, make clearer the writ-

er's descriptions of observed conditions and methods of examination, diagnosis and treatment—operative or non-operative.

In so far as is possible this is an original work; little is superfluous; all is to the point with that happy judgment which uses neither more nor less phrases than necessary to render his meaning both clear and forceful. All general practitioners may not spend a year at a rectal clinic, but all may master this work, and make themselves far more capable of managing this important class of cases.

Further, as every human being has a rectum, whose disorders are not unlikely to modify morbid action in any other part of the body, all specialists as well as rectal ones would be both interested and profited by the mastery of much if not all of this work.

Finally this belongs to the small class of books, whose facts have been mastered by the writer, tested in the crucible of his actual experience, and presented in a form readily comprehended, with a scientific spirit and teachable method.

Progress of Medical Science.

MEDICINE.

Under the charge of

HARRISON D. JENKS.

The Pharmocologic Action of Drugs.—Vejux-Tyrode gives a very interesting historical discussion of the relation between the pharmacologic action of drugs and their therapeutic indications. At first drugs were used empirically, largely according to the user's individual experience. As a result many systems of therapeutics based on sophistry have come and gone. Pharmacology has been slow to develop because the methods of observation formerly used to study the action of drugs were entirely wrong. While the theory of obtaining knowledge by experimentation is good, conclusions should be made with great caution. Pathology teaches that disease is due to the abnormal increase, decrease, or arrest of function from some cause. Hence drugs should be directed toward that cause; but unfortunately we do not know the cause of many diseases and moreover few drugs act on even known causes. Few clinicians to-day fail to realize the usefulness and even the indispensability of the accurate knowledge of the action of drugs. We should know, for example, that while morphin relieves the pain of pneumonia it may cause asphyxiation from depression of the respiratory center. Morphin, no matter how taken into the body, is eliminated into the stomach. To prevent re-absorption in cases of poisoning from the drug, repeated washing of the stomach for hours afterward will be necessary.

Again, ether and chloroform are absorbed in the blood according to the law of partial tension. Therefore the intensity of action depends not on the total amount used but on the concentration in the blood at a given time. Death often occurs from giving them in too concentrated a form. Neither of these drugs, it has been found, has a direct stimulant action on the heart, but depresses it when given in sufficient doses. Hence the uselessness of ether subcutaneously in collapse.

No antiseptic can be placed in the blood in a form concentrated enough to destroy bacteria. Therefore the use of all known drugs, as benzosol, formaldehyde, etc., should be discontinued, because useless and tending to decrease the vitality and even hastening death.

Apomorphin lately lauded in the treatment of acute alcoholism as a hypnotic has no narcotic effects except just before producing death. Hence any effects it may produce are from its emetic action.

Chologogue effects are produced by the bile alone. Hence all so-called chologogues are merely cathartics and produce results from their purgative action only.

The use of mineral baths has lately been found to be very limited. Neither water nor the salts are absorbed through the unbroken skin. Their action, therefore, is local and of an irritant character only, producing reflex stimulation of circulation, respiration and metabolism. Because of this increase in the metabolism, any chronic ailment will be temporarily helped. As the salts and alkalies will dissolve mucous, mineral waters will be useful in catarrhal intestinal conditions where the mucous adheres to the intestinal wall. As good results, however, might be obtained at home by baths and by drinking water to which the various salts have been added, if you will exclude the psychic effects and careful regimen of the spa.—(*Jour. A. M. A.*, Nov. 21, 1903.)

Typhoid Fever and Lemon Juice.—Bissell has tested the value of lemonade in rendering the typhoid bacillus inert. He uses three methods. Ordinary strength lemonade added to bouillon growths of the bacillus; in the

other two the same strength lemonade to which was added dried specimens of the bacillus. His conclusions are as follows: First, that lemon juice in the proportions given (the strength of ordinary strong lemonade) has little, if any, germicidal action upon typhoid bacilli. Second, that this method of treating water to prevent a possible typhoid infection should be discouraged.—(*N. Y. Med. Jour.*, Nov. 21, 1903.)

SURGERY.

Under the charge of

MAX BALLIN.

Dangers of Trendelenburg Position.—The advantages of elevating the pelvis in operations on the pelvic organs are so many that nowadays most surgeons apply this position, first recommended by and named after Trendelenburg, in nearly all operations on the pelvic organs, some also in suprapubic cystotomy, in appendectomies and radical operation for hernia. Still this posture seems to be followed sometimes by dangerous sequels: P. Kraske (Archiv fuer klinische Chirurgie, Vol. 71) draws attention to the changes in the circulation, to the congestion of heart, lungs and brain caused by the inverted position of the body. He claims this posture to be responsible for the fatal termination of two cases of suprapubic lithotomy. Both patients were suffering from myocarditis; the operation was quickly performed, but right after the operation the heart grew weaker and weaker until death occurred, in one case two days, in the other four days, after the operation. In these cases the Trendelenburg position was only supposed to be responsible for the fatal termination. In another case of intestinal obstruction after a suprapubic lithotomy Kraske could show by a secondary operation and by autopsy that the posture was responsible for the postoperative complication. The patient was a very fat man; 24 hours after the lithotomy symptoms of intestinal obstruction and hematemesis occurred. On the fourth day secondary operation for the relief of the obstruction showed that the whole very fatty and voluminous omentum had slipped into the space between liver and colon transversum, twisting the latter upward. The patient died in spite of removal of the obstruction. Autopsy showed numerous punctiform hemorrhages in the mucosa of the stomach. There can be no doubt but that this peculiar dislocation of the omentum had occurred during the elevation of the pelvis. Also the small hemorrhages in the mucosa of the stomach and the hematemesis were probably caused by venous congestion following the pressure by the dislodged omentum. Kraske holds that before closing the abdominal cavity the patient should be always put back into horizontal position, omentum and intestines should be replaced in the normal position (in cystotomy by external pressure) before suturing the wound. In fatty patients and in those with alterations on hear and blood vessels elevation of the pelvis should be avoided.

Intestinal Localization.—The question of locating a loop of small intestine withdrawn through an abdominal section is often very difficult to answer, especially if the normal conditions are modified by inflammatory processes, intestinal distension or tumors. Yet it may be very important, for instance, in enteroanastomosis or in obstruction of the bowels to know whether a loop is near the duodenum or close to the ileo-cecal valve.

George H. Monks (Annals of Surgery, October, 1903) gives a very valuable contribution to this question, entitled "Intestinal Localization." He found that an approximate localization of a part of the small intestine is possible through a small adbominal section by observing certain characteristics, as its position in the abdominal cavity, its size, color and thickness, the presence or absence of valvulæ conniventes, the thickness and translucency of the mesentery and especially the distribution of the blood-vessels in the mesentery, etc. Taking the average length of the small intestine at 21 feet, there are the first seven feet usually located in the left hypochondrium, the middle third in the middle section of the abdomen and the lower third in the pelvis and in the right iliac region. The color of the first 14 feet is bright pink, the color of the last seven feet yellowish-gray. The size and thickness of the intestine decreases from the duodenum downward. Valvulæ conniventes are large and numerous in the first third, absent after a distance of 14 feet from the duodenum. The mesentery is thin and translucent in the upper third, thick and opaque near the colon, tabs of fat on the intestinal attachment of the mesentery commence at about the fourteenth foot of the small intestine. The vessels of the mesentery form only one loop in the first four feet,

further down two loops and are entirely irregular in the lower part of the ileum. The observation of these and other characteristics enabled Monk to locate correctly with only small errors at least on the cadaver any loop of small intestine withdrawn through a small abdominal section.

GYNECOLOGY AND OBSTETRICS.

Under the charge of

B. R. SCHENCK.

Urinary Hyperacidity.—T. R. Brown again calls attention to the cases simulating cystitis, in which the symptoms are due, not to an infection of the bladder, with true inflammation, but to an irritation of the mucous membrane, caused by an abnormally high acidity of the urine. From repeated examinations, Brown believes that the normal acidity is 25, i. e.—100 c. cm. of urine are neutralized by 25 c. cm. of deci-normal sodium hydrate solution. In the cases under consideration it was found to be from 2 to 5 times this amount. If this condition is not recognized by carefully excluding, by means of cultures, a true cystitis, unnecessary local treatment may aggravate the symptoms and finally cause infection and inflammation. The condition is usually of neuropathic origin.

During the past two years the writer has met with ten cases, the histories of two of which are given. With one exception all were in neurasthenics. Most of them had been diagnosed as cystitis. Brown believes that this condition occurs frequently, and that it is often misinterpreted and erroneously treated.

The treatment consists in the administration of potassium citrate in x to xxx gr. doses every four hours, until the acidity is reduced to, or below, normal, and then in sufficient doses to maintain this. Sodium bicarbonate may also be used. Large quantities of any pure water should be taken. Irrigations and local treatments are absolutely contraindicated. —(*N. Y. Med. Jour.*, Nov. 14, 1903; *Phil. Med. Jour.*, March 2, 1901.)

Sphygnomanometer.—Graves describes a modification of the Riva-Rocci sphygnomanometer, for use in the operating room which obviates the inconvenience attending the use of the mercury instrument. An ordinary aneroid manometer is used as an indicator, the lever controlling the needle being bent backward so that the excursion of the latter will be greater and the graduations on the dial farther apart. The scale on the face is etched to correspond to millimeters of mercury. Such an instrument is simple and has been found to give very satisfactory results at the Free Hospital for Women in Boston.—(*The Bulletin of the Free Hospital for Women*, Boston, Vol. 1, No. 2.)

The Treatment of Puerperal Sepsis.—Montgomery speaks of the decrease of the disease during the past 30 years, and of the tendency to hide the true condition by diagnosis of la grippe, malaria, typhoid fever, etc. Much difference of opinion as to the proper treatment exists and many procedures are advocated. Montgomery deprecates the use of the serum, hysterectomy, and the infusions of formalin. After trying the latter, he believes that it is no more efficacious than normal saline. The patients must be kept clean, vaginal douches of sublimate (1 to 2000) or formalino (1 to 1500) given, and the condition of the bowels and the kidneys watched. Coal tar products should not be used, but high temperatures combated with cold sponges. Frequent enemata of salt solution are useful. Local inflammation in the pelvis is to be treated by the application of ice, and pus, should it form, be promptly evacuated by vaginal incision. When the infection is profound, without local manifestations, saline infusions offer the best hope of recovery. Not over 750 c. cm. should be given at one time. —(*Amer. Med.*, Vol. VI., p. 735, Nov. 7, 1903.)

Eclampsia.—Tschernomordik gives some valuable statistics on this disease from the Charite in Berlin. During the ten years previous to 1899 there were 322 cases, or 1.83% of all births. It occurred more frequently in primiparæ than multiparæ, and was oftenest observed only during the confinement. Next in frequency was during the puerperium, during labor and the puerperium, and lastly during the pregnancy alone. The maternal mortality was 23.9%. There were 12 cases of twins, and 103 still births. Albumen occurred in the urine in all but 6 cases.

The treatment consisted in the administration of morphia and chloral and the speedy termination of the pregnancy. The fatal cases were studied with a view of determining the cause of eclampsia, but nothing new was demonstrated.—(*Gen. f. Gyn.*, 1903, No. 41, Oct. 10.)

The Advertiser

The new building of Frederick Stearns & Co. for housing the calves and performing operations necessary to the propagation of vaccine is almost finished. It is on the site of the former one, which was razed to make room for it. A fuller description will be given later, but a statement of a few of its many advantages and conveniences may be of interest at this time.

This building is entirely of brick, has but one outside entrance and no windows whatever, being lighted by skylights of the most modern and approved form, fitted with prismatic glass which diffuses a very strong light without allowing direct rays of sunshine to enter. Ventilation is had by means of powerful patent ventilators and electric fans. Thus the dust from outside sources is absolutely excluded, which is an important item in the production of pure vaccine. The building is heated by steam, lighted by electricity and provided with hot and cold water throughout.

The large incubating room is equipped with iron stalls provided with small racks on which the calves stand. This raises the animals from the floor so that they do not stand in their own excretions even for a moment. The walls of this room are of pressed brick, enameled white, and the ceiling is arched or "coved," doing away with corners. The floor is of concrete, drained by a number of sewers. There is no wood in this room, even the racks on which the animals stand being iron, and these racks are scrubbed, sunned and sterilized daily, there being two complete sets. The room is cleaned daily by flushing with a hose.

The cleaning and sterilizing room adjoins the operating room. Both of these are practically porcelain lined, the walls being of glazed white tile with all joints enameled, making a continuous snow-white waterproof surface as smooth as glass. The ceilings are coved here also, doing away with corners. The light is from skylights and the ventilation through flues. Neither of these rooms has an outside door or window. The sterilizing room is provided with electric clippers, by means of which the calves from the quarantine barn are very closely clipped; then the calves are scrubbed in a hot antiseptic bath in the vats with which this room is provided. After being thus thoroughly cleansed they are shaved over the area to which the vaccine is applied. Then being transferred to the next room, they are vaccinated and placed in the incubating room first described and fed on sterilized milk during the progress of the vaccinia which has been induced. It should, perhaps be stated here that when the calves are first received from the farm they are placed in a quarantine station devoted entirely to their use, and are kept here for some time under the inspection of our head veterinarian, to demonstrate their entire healthiness, before being vaccinated.

The operating room is as clean and aseptic as that of a modern hospital. It is provided with all necessary apparatus, and, like the operating room of the antitoxin laboratory, is considered without an equal.

In this building also, but entirely separate from the vaccine department and not communicating with it in any way either by door or window, are the large injecting and bleeding rooms of the antitoxin laboratory. In the first of these rooms horses are injected with the toxins. The walls of this room are of pressed brick covered with white, waterproof enamel, and having coved ceiling and concrete floor. The operating room which communicates with this has walls of white glazed tile, exactly like those in the vaccine operating room, with arched ceiling and cement floor. The instruments are kept in plate glass cases, the antiseptic solutions, etc., on plate glass shelves—in fact, the arrangements are very similar to those of a hospital, as has been stated.

Taken as a whole, nothing has been left undone that science could suggest and money could procure that would tend to make this portion of our antitoxin and vaccine establishment ideally perfect.

We are informed by the Globe Manufacturing Co., of Battle Creek, that an unusual number of inquiries were received by them in response to their special offer made in September and October. They were naturally quite pleased over this showing, and have decided to make another attractive offer during December. They will call this their Holiday

Bargain. Intending purchasers will doubtless be interested, in view of the standard quality of the goods offered by this firm. Incidentally this testimony indicates that our subscribers read the advertising pages, and are on the alert to avail themselves of a good thing in the way of a bargain when it is placed before them. For further information note their ad in this issue, or write them direct.

ADRENALIN AND ITS USES IN GENERAL SURGERY.

Under the above title an article appears in the October issue of the *Indian Medical Gazette,* from the pen of Harry Gidney, F.R.C.S. (Edin.), D.P.H. (Camb.), etc. The author finds that "the clinical usefulness of Adrenalin is very great and extensive, and owing to its power of rapidly and effectively producing vaso-motor constriction, it is adapted to the treatment of all inflammatory conditions. The drug is also of extreme value in arresting hemorrhage during all surgical operations. It is indicated whenever and wherever any local hyperæmia exists, more especially in inflammations of mucous surfaces such as those of the eye, throat, larynx, pharynx, urethra, bladder, nose, rectum, vagina, uterus, stomach, etc. It is used not only to stay hemorrhage when it exists, but also as a preventive or controlling remedy, given either internally or externally prior to an operation, so as to lessen the amount of bleeding during the performance of that operation. It is a non-irritant to mucous membrane unless when used too frequently and in excess.

"On reading the literature on the subject," says the writer, "I find that adrenalin is admitted to be the most powerful and rapid cardiac stimulant and tonic we have, being chiefly used in cardiac affections, hæmatemesis, hemoptysis, hemophilia, hematuria, menorrhagia, post-partum hemorrhage, purpura, scurvy, etc. It is said to be the most rapid restorative in chloroform and other forms of anesthetic syncope, and in such cases it is advisable to administer it intravenously."

The author reports the results of several operations, major and minor, in which adrenalin was employed. The first case was one of fracture of the vertex of the skull. As one of the larger branches of the middle meningeal artery had been torn there was profuse dural hemorrhage and capillary oozing which were controlled by the use of the 1-1000 solution. In the second case, one of hemorrhoids, profuse bleeding was checked by the rectal insertion of a plug of cotton wool soaked with adrenalin chloride solution.

The third case was one of skin grafting in which the author tried pressure to stop the capillary bleeding. As the procedure was somewhat tedious he applied adrenalin chloride solution with almost immediate cessation of all oozing, and what is usually a lengthy and sanguinary operation was converted into a short and comparatively bloodless one.

The fourth case, one of hemorrhage after the extraction of teeth, and the fifth, which appears to embrace the author's experience in a number of cases of epistaxis, afforded additional opportunity to test the hemostatic effect of adrenalin.

In case VI a post partum hemorrhage was checked by swabbing the uterine cavity with adrenalin solution, while the same happy result was obtained in a case of secondary hemorrhage following an operation for the relief of a mammary abscess.

The author has found that the instillation of a 1-5000 to 1-2000 solution of this drug reduces the inflammation and considerably cuts short the process of conjunctivitis. He usually applies it (diluted) over the inflamed parts by means of a soft camel's-hair brush. He always uses the preparation containing chloretone, which has a decided local anesthetic action relieving much of the photophobia and pain. He is fully convinced of the power of adrenalin to arrest or lessen the bleeding that arises from the cut ends of the iris after iridectomy. He speaks highly of its efficiency in chemosis, cataract operations, evisceration of the eyeball, operations for ectropion, symblepharon and trachomatous pannus.

The author concludes that in all cases of minor surgery in which it is desired to arrest bleeding from any cut or exposed surface we have in adrenalin a most useful, powerful and rapid drug—one that is non-poisonous, non-irritant and non-accumulative, especially in operations upon the conjunctiva and eyelids.